

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 24, 2001, 16:13:04 : Search time 42.63 Seconds
(without alignments)
63.994 Million cell updates/sec

Title: US-09-579-420-1

Perfect score: 264

Sequence: 1 PGPCESEKRLHFVDDPQTC.....NTDSNCKARQLELNERTCRC 45

Scoring table:

BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 412676 seqs, 60623988 residues

Total number of hits satisfying chosen parameters: 412676

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

A.Geneseq_0601:*

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- 2: /SIDS8/gcgdata/geneseq/geneseq/AA1981.DAT:*
- 3: /SIDS8/gcgdata/geneseq/geneseq/AA1982.DAT:*
- 4: /SIDS8/gcgdata/geneseq/geneseq/AA1983.DAT:*
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- 6: /SIDS8/gcgdata/geneseq/geneseq/AA1985.DAT:*
- 7: /SIDS8/gcgdata/geneseq/geneseq/AA1986.DAT:*
- 8: /SIDS8/gcgdata/geneseq/geneseq/AA1987.DAT:*
- 9: /SIDS8/gcgdata/geneseq/geneseq/AA1988.DAT:*
- 10: /SIDS8/gcgdata/geneseq/geneseq/AA1989.DAT:*
- 11: /SIDS8/gcgdata/geneseq/geneseq/AA1990.DAT:*
- 12: /SIDS8/gcgdata/geneseq/geneseq/AA1991.DAT:*
- 13: /SIDS8/gcgdata/geneseq/geneseq/AA1992.DAT:*
- 14: /SIDS8/gcgdata/geneseq/geneseq/AA1993.DAT:*
- 15: /SIDS8/gcgdata/geneseq/geneseq/AA1994.DAT:*
- 16: /SIDS8/gcgdata/geneseq/geneseq/AA1995.DAT:*
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- 18: /SIDS8/gcgdata/geneseq/geneseq/AA1997.DAT:*
- 19: /SIDS8/gcgdata/geneseq/geneseq/AA1998.DAT:*
- 20: /SIDS8/gcgdata/geneseq/geneseq/AA1999.DAT:*
- 21: /SIDS8/gcgdata/geneseq/geneseq/AA2000.DAT:*
- 22: /SIDS8/gcgdata/geneseq/geneseq/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	264	100.0	45	20	AAV22023	VEGF antagonist pe
2	264	100.0	164	12	AAK10911	Bovine vascular en
3	264	100.0	164	14	AAK38920	Bovine VEGF-164.
4	264	100.0	165	14	AAK38921	Human VEGF-165. H
5	264	100.0	165	18	AAW31085	Vascular endotheli
6	264	100.0	165	18	AAW31086	Vascular endotheli
7	264	100.0	165	18	AAW31087	Vascular endotheli
8	264	100.0	165	18	AAW31088	Vascular endotheli
9	264	100.0	165	18	AAW31089	Vascular endotheli
10	264	100.0	165	18	AAW31090	Vascular endotheli
11	264	100.0	165	18	AAW31091	Vascular endotheli

12	264	100.0	165	18	AAW31092	Vascular endotheli
13	264	100.0	165	18	AAW31093	Vascular endotheli
14	264	100.0	165	18	AAW31094	Vascular endotheli
15	264	100.0	165	18	AAW31095	Vascular endotheli
16	264	100.0	165	18	AAW31096	Vascular endotheli
17	264	100.0	189	20	AAV08281	Human growth facto
18	264	100.0	189	21	AAV92005	Human vascular end
19	264	100.0	190	11	AAV08001	Bovine vascular en
20	264	100.0	190	20	AAV33440	Parapox virus VEGF
21	264	100.0	191	11	AAV08002	Human vascular end
22	264	100.0	191	16	AAV081076	Human vascular end
23	264	100.0	191	17	AAV00724	Vascular endotheli
24	264	100.0	191	17	AAV94002	VEGF165. Homo sap
25	264	100.0	191	18	AAV38242	Vascular endotheli
26	264	100.0	191	19	AAV69331	Human VEGF protein
27	264	100.0	191	19	AAV62525	Amino acid sequenc
28	264	100.0	191	19	AAV57398	Variant vascular e
29	264	100.0	191	19	AAV57399	Variant vascular e
30	264	100.0	191	20	AAV33439	Parapox virus VEGF
31	264	100.0	191	20	AAV07725	Human VEGF protein
32	264	100.0	191	21	AAV28232	Wild-type human VE
33	264	100.0	191	21	AAV28233	Mutant human VEGF
34	264	100.0	191	21	AAV28234	Mutant human VEGF
35	264	100.0	191	21	AAV28235	Mutant human VEGF
36	264	100.0	191	21	AAV28236	Mutant human VEGF
37	264	100.0	191	21	AAV90403	VEGF encoded by cl
38	264	100.0	191	21	AAV69414	Amino acid sequenc
39	264	100.0	191	21	AAV83035	Human vascular end
40	264	100.0	191	22	AAV31562	Amino acid sequenc
41	264	100.0	191	22	AAV97568	Human VEGF protein
42	264	100.0	192	22	AAV50433	Human VEGF165. Ho
43	264	100.0	192	17	AAV94039	VEGF165 Cys+2. Ho
44	264	100.0	192	17	AAV94040	VEGF165 Cys+2. Ho
45	264	100.0	208	20	AAV43463	Amino acid sequenc

ALIGNMENTS

RESULT 1	
AAV22023	standard; peptide; 45 AA.
XX	
AC	AAV22023:
XX	
DT	26-AUG-1999 (first entry)
XX	
DE	VEGF antagonist peptide.
XX	
KW	VEGF; vascular endothelial growth factor; antagonist; neovascularisation;
KW	angiogenesis; retinal neovascularisation; haemangioma; Kaposi's sarcoma;
KW	solid tumour growth; leukemia; metastasis; psoriasis; osteoarthritis;
KW	angiogenic disease; neovascular glaucoma; diabetic retinopathy; therapy;
KW	rheumatoid arthritis; endometriosis; muscular degeneration;
XX	retinopathy of prematurity.
XX	
OS	Homo sapiens.
XX	
PN	WO9929861-A1.
XX	
PD	17-JUN-1999.
XX	
PF	09-DEC-1998; 98WO-US26103.
XX	
PR	12-DEC-1997; 97US-0069687.
XX	
PR	09-DEC-1997; 97US-0069155.
XX	
PA	(CHIL-) CHILDRENS MEDICAL CENT.
XX	
PI	Klagsbrun M, Soker S;
XX	
DR	WPI; 1999-385607/32.
XX	

PT New peptide antagonists of vascular endothelial growth factor (VEGF)
 XX
 PS- Claim 1: Page 46; 53pp; English.
 XX
 CC This sequence represents a vascular endothelial growth factor (VEGF)
 CC antagonist of the invention. The antagonist is a portion of the seventh
 CC exon of VEGF, and acts as an antagonist to all VEGF isoforms, even if
 CC they do not have exon 7. The VEGF antagonist peptides can be used to
 CC treat diseases or disorders associated with VEGF-induced
 CC neovascularisation or inappropriate angiogenesis. Diseases and disorders
 CC treated include retinal neovascularisation, haemangiomas, solid tumour
 CC growth, leukaemia, metastasis, psoriasis, neovascular glaucoma, diabetic
 CC retinopathy, rheumatoid arthritis, osteoarthritis, endometriosis,
 CC sarcoma. Solid tumours expressing VEGF are also a target for gene
 CC therapy using the peptide antagonist of the invention, e.g. neoplasms of
 CC the central nervous system (glioblastomas, astrocytomas, neuroblastomas,
 CC meningiomas, ependymomas), cancers of hormone-dependent tissues (e.g.
 CC prostate, testicles, uterus, ovary, mammary carcinoma), melanomas,
 CC cancers of the lung, and cancers of the gastrointestinal tract. Current
 CC treatment of angiogenic diseases is inadequate. Although preliminary
 CC results with antiangiogenic proteins are promising, the proteins are
 CC relatively large in size and so are difficult to use and produce.
 CC Antiangiogenic agents that show improvement in size, ease of production,
 CC stability and/or potency would be desirable. The peptides of the
 CC invention go some way to achieving these aims.
 XX
 SQ Sequence 45 AA:
 Query Match 100.0%; Score 264; DB 20; Length 45;
 Best Local Similarity 100.0%; Pred. No. 3.8e-22;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 PCGPCSERRKHLFVDPOTCKSCKNTDSRCARQLENERCRC 45
 DB 1 pcgpcseerrkhlfvdpotckscskntdsrckarqlenercerc 45
 RESULT 2
 AAR10911
 ID AAR10911 standard; Protein; 164 AA.
 XX
 AC AAR10911;
 XX
 DT 08-MAY-1991 (first entry)
 XX
 DE Bovine vascular endothelial cell growth factor 164.
 XX
 KW Bovine vascular endothelial cell growth factor; angiogenesis;
 KW wound healing; bVEGF; PDGF.
 OS Bos taurus.
 XX
 PN WO9102058-A.
 PD 21-FEB-1991.
 XX
 PF 27-JUL-1990; 90WO-US04227.
 XX
 PR 14-DEC-1989; 89US-0450883.
 PR 27-JUL-1989; 89US-0387545.
 XX
 PA (CALB-) CALIF BIOTECHN INC.
 PI Tischer ER, Abrahamam, Fiddes JC, Mitchell RL.
 DR WPI: 1991-073534/10.
 DR N-PSDB: AAQ10791.
 PT DNA encoding vascular endothelial cell growth factor - used for
 PT producing the factor for angiogenesis and re-endothelialisation
 PT in wound healing

XX
 PS Disclosure; Fig 6(1-3); 94pp; English.
 XX
 CC Bovine folliculo stellate cells were used in the process of
 CC obtaining cDNA encoding bVEGF (164 amino acids from). The probes
 CC represented in AAQ10806 and -07 were used in the screening procedures.
 CC See AAQ10796 for bVEGF120 which is obtained by alternative splicing of
 CC this sequence, i.e. bases 342-473 (amino acids 115-158) are spliced.
 CC The product can be used for angiogenesis and re-endothelialisation
 CC of inner vascular surfaces in wound healing, e.g. treatment of full-
 CC thickness wounds such as dermal ulcers, venous ulcers and diabetic
 CC ulcers, burns, in surgery, in balloon angioplasty and for the in
 CC vitro culturing of endothelial cells. Hybrid growth factors of PDGF
 CC and VEGF can exhibit a mitogenic profile between each factor and
 CC e.g. preventing the growth of tumours.
 CC VEGF analogues in which Cys residues are substid. are more stable.
 CC See also AAQ10791-93; AAQ10796-97; AAQ10806-08 and AAQ11099.
 XX
 SQ Sequence 164 AA:
 Query Match 100.0%; Score 264; DB 12; Length 164;
 Best Local Similarity 100.0%; Pred. No. 1.3e-21;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 PCGPCSERRKHLFVDPOTCKSCKNTDSRCARQLENERCRC 45
 DB 115 pcgpcseerrkhlfvdpotckscskntdsrckarqlenercerc 159
 RESULT 3
 AAR38920
 ID AAR38920 standard; Protein; 164 AA.
 XX
 AC AAR38920;
 XX
 DT 28-OCT-1993 (first entry)
 XX
 DE Bovine VEGF-164.
 XX
 KW Angiogenesis; wound healing; mitogen; vascular endothelial cells;
 KW Vascular Endothelial Cell Growth Factor; bVEGF-164; bVEGF-120.
 OS Bos.
 XX
 FH Key Location/Qualifiers
 FT Region 114..158
 FT /note="encoded by exon which is absent in the
 FT alternatively spliced coding sequence
 FT which encodes bVEGF-120"
 FT
 PN US5219739-A.
 PD 15-JUN-1993.
 XX
 PF 27-JUL-1989; 89US-0387545.
 XX
 PR 27-JUL-1989; 89US-0387545.
 PR 14-DEC-1989; 89US-0450883.
 PR 27-JUL-1990; 90US-0559041.
 XX
 PA (SCIO-) SCIOS NOVA INC.
 PI Abraham JA, Fiddes JC, Mitchell RL, Tischer EG;
 DR WPI: 1993-205302/25.
 DR P-PSDB: AAQ44259.
 PT Isolated DNA sequences, expression vectors and transformant cells
 PT - used for large scale produ. of vascular endothelial cell growth
 PT factor, for treating wounds in which neo-vascularisation is
 PT required

```
XX Example 4 and Claim 1; Fig 6; 40pp; English.
PS
XX
CC The sequence of AA044259 contains an open reading frame corresponding
CC to the 164 amino acid bovine vascular endothelial cell growth
CC factor (bVEGF-164, i.e. AAR38920). Alternative splicing of the
CC sequence gives a shorter coding sequence which encodes the 120
CC amino acid bVEGF (see AAR38916).
XX
SQ Sequence 164 AA:

Query Match          100.0%; Score 264; DB 14; Length 164;
Best Local Similarity 100.0%; Pred. No. 1.3e-21;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPCSERRRKHLFVQDPOTCKSCSKNTDSRCKARQLELNERTCRC 45
   |||||||
Db 115 pcgpcserrrkhlftvqdpqtcscskntdsrckarqlelnertc 159

RESULT 4
AAR38921
ID AAR38921 standard; Protein: 165 AA.
XX
AC AAR38921;
XX
DT 28-OCT-1993 (first entry)
XX
DE Human VEGF-165.
XX
KM Angiogenesis; wound healing; mitogen; vascular endothelial cells;
KM Vascular Endothelial Cell Growth Factor; hVEGF-165; hVEGF-121.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT MISC-difference 7 /note="inserted amino acid relative to bVEGF"
FT FT 115.159
FT Region /note="replaced by Lys in hVEGF-121"
XX
XX US5219739-A.
XX
XX 15-JUN-1993.
XX
XX 27-JUL-1989; 89US-0387545.
XX
XX 27-JUL-1989; 89US-0387545.
XX
XX 14-DEC-1989; 89US-0450883.
XX
XX 27-JUL-1990; 90US-0559041.
XX
XX (SCIO-) SCIOS NOVA INC.
XX
XX Abraham JA, Fiddes JC, Mitchell RL, Tischer EG;
XX
XX WPI: 1993-205302/25.
XX
XX DR N-PSDB; AA044260.
XX
XX
XX Isolated DNA sequences, expression vectors and transformant cells
XX - used for large scale prodn. of vascular endothelial cell growth
XX factor, for treating wounds in which neo-vascularisation is
XX required
XX
XX Example 7; Fig 7; 40pp; English.
XX
XX The sequence of AA044260 contains an open reading frame corresponding
XX to the 165 amino acid human vascular endothelial cell growth
XX factor (hVEGF-165, see AAR38921). Alternative splicing of the
XX sequence gives a shorter coding sequence which encodes the 121
XX amino acid hVEGF (see AAR42607). The full-length coding sequences can
XX be generated using PCR with human foetal vascular smooth muscle
XX poly-A+ RNA as template.
```

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XX
SQ Sequence 165 AA:

Query Match          100.0%; Score 264; DB 14; Length 165;
Best Local Similarity 100.0%; Pred. No. 1.3e-21;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPCSERRRKHLFVQDPOTCKSCSKNTDSRCKARQLELNERTCRC 45
   |||||||
Db 116 pcgpcserrrkhlftvqdpqtcscskntdsrckarqlelnertc 160

RESULT 5
AAW31085
ID AAW31085 standard; Protein: 165 AA.
XX
AC AAW31085;
XX
DT 16-JAN-1998 (first entry)
XX
DE Vascular endothelial growth factor variant used in drug screening.
XX
XX VEGF; vascular endothelial growth factor; variant; mutant;
XX substitution; drug screening; kinase domain binding region; KDR;
XX FMS-like tyrosine kinase binding region; FLT-1; drug screening;
XX testing; vasculogenesis; angiogenesis; metastasis; cancer; tumour;
XX neoplasia.
XX
XX Homo sapiens.
XX
XX OS Synthetic.
XX
XX
XX FH Key Location/Qualifiers
FT MISC-difference 63 /note="wild-type Asp replaced by Ala"
FT FT 64
FT MISC-difference 64 /note="wild-type Glu replaced by Ala"
FT FT 67
FT MISC-difference 67 /note="wild-type Glu replaced by Ala"
XX
XX W09708313-A1.
XX
XX 06-MAR-1997.
XX
XX 23-AUG-1996; 96WO-US13621.
XX
XX 02-AUG-1996; 96US-0691791.
XX
XX 25-AUG-1995; 95US-0002827.
XX
XX 05-DEC-1995; 95US-0567200.
XX
XX (GETH ) GENENTECH INC.
XX
XX Cunningham BC, Ferrara N, Keyt B, Li B, Nguyen FH;
XX
XX Wells JA;
XX
XX WPI: 1997-179270/16.
XX
XX
XX Vascular endothelial cell growth factor variant - used to identify
XX candidates having agonistic or antagonistic properties with respect
XX to KDR and/or FLT receptor binding
XX
XX Claim 6; Page -; 130pp; English.
XX
XX AAW31085-W31096 are vascular endothelial growth factor (VEGF) variants.
XX Especially preferred modifications comprise mutations in the kinase
XX domain binding region (KDR) or the FMS-like tyrosine kinase binding
XX region (FLT-1). All indicated residues are preferably replaced with
XX alanine. The variants may be used in an assay for identifying
XX candidate compositions having agonistic or antagonistic properties
XX with respect to KDR and/or FLT receptor binding, by measuring the
XX effect the candidate has on the binding properties of the variants
XX to the KDR and/or FLT-1 receptors. Compositions identified may be
XX useful for treating indications where vasculogenesis or angiogenesis
```

CC is desired for treatment of an underlying disease state.
 CC N.B. This sequence is not given in the specification; it was created
 CC from a claimed specified mutant of wild-type mature VEGF.
 CC
 XX
 SQ Sequence 165 AA;

-Query Match 100.0%; Score 264; DB 18; Length 165;
 Best Local Similarity 100.0%; Pred. No. 1.3e-21;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 PCGPSERRKHLFVDPOTCKSCCKNTDSRCAROLEINERTC 45
 DB 116 pcgpserrrkhlfdvdpotckscckntdsrckarqlelnertc 160

RESULT 6
 AAW31086
 ID AAW31086 standard; Protein; 165 AA.

AC AAW31086;
 DT 16-JAN-1998 (first entry)

DE Vascular endothelial growth factor variant used in drug screening.

KW VEGF; vascular endothelial growth factor; variant; mutant;
 KW substitution; drug screening; kinase domain binding region; KDR;
 KW FMS-like tyrosine kinase binding region; FLT-1; drug screening;
 KW testing; vasculogenesis; angiogenesis; metastasis; cancer; tumour;
 KW neoplasia.

OS Homo sapiens.
 OS Synthetic.

Key Location/Qualifiers

FT Misc-difference 82 /note= "wild-type Arg replaced by Ala"

FT Misc-difference 84 /note= "wild-type Lys replaced by Ala"

FT Misc-difference 86 /note= "wild-type His replaced by Ala"

PN WO9708313-A1.

PD 06-MAR-1997.

PF 23-AUG-1996; 96WO-US13621.

PR 02-AUG-1996; 96US-0691791.

PR 25-AUG-1995; 95US-0002827.

PR 05-DEC-1995; 95US-0567200.

XX (GETH) GENENTECH INC.

XX Cunningham BC, Ferrara N, Keyt B, Li B, Nguyen FH;

PI Wells JA;

DR WPI; 1997-179270/16.

XX Vascular endothelial cell growth factor variant - used to identify

XX candidates having agonistic or antagonistic properties with respect

XX to KDR and/or FLT receptor binding

PS Claim 6; Page -; 130pp; English.

XX AAW31085-W31096 are vascular endothelial growth factor (VEGF) variants.
 CC Especially preferred modifications comprise mutations in the kinase
 CC domain binding region (KDR) or the FMS-like tyrosine kinase binding
 CC region (FLT-1). All indicated residues are preferably replaced with
 CC alanine. The variants may be used in an assay for identifying
 CC candidate compositions having agonistic or antagonistic properties
 CC with respect to KDR and/or FLT receptor binding, by measuring the

CC effect the candidate has on the binding properties of the variants
 CC to the KDR and/or FLT-1 receptors. Compositions identified may be
 CC useful for treating indications where vasculogenesis or angiogenesis
 CC is desired for treatment of an underlying disease state.
 CC N.B. This sequence is not given in the specification; it was created
 CC from a claimed specified mutant of wild-type mature VEGF.
 CC
 XX
 SQ Sequence 165 AA;

Query Match 100.0%; Score 264; DB 18; Length 165;
 Best Local Similarity 100.0%; Pred. No. 1.3e-21;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 PCGPSERRKHLFVDPOTCKSCCKNTDSRCAROLEINERTC 45
 DB 116 pcgpserrrkhlfdvdpotckscckntdsrckarqlelnertc 160

RESULT 7
 AAW31087
 ID AAW31087 standard; Protein; 165 AA.

AC AAW31087;
 DT 16-JAN-1998 (first entry)

DE Vascular endothelial growth factor variant used in drug screening.

KW VEGF; vascular endothelial growth factor; variant; mutant;
 KW substitution; drug screening; kinase domain binding region; KDR;
 KW FMS-like tyrosine kinase binding region; FLT-1; drug screening;
 KW testing; vasculogenesis; angiogenesis; metastasis; cancer; tumour;
 KW neoplasia.

OS Homo sapiens.
 OS Synthetic.

Key Location/Qualifiers

FT Misc-difference 63 /note= "wild-type Asp replaced by Ala"

FT Misc-difference 64 /note= "wild-type Glu replaced by Ala"

FT Misc-difference 67 /note= "wild-type Glu replaced by Ala"

FT Misc-difference 82 /note= "wild-type Glu replaced by Ala"

FT Misc-difference 84 /note= "wild-type Arg replaced by Ala"

FT Misc-difference 86 /note= "wild-type Lys replaced by Ala"

FT Misc-difference 86 /note= "wild-type His replaced by Ala"

PN WO9708313-A1.

PD 06-MAR-1997.

PF 23-AUG-1996; 96WO-US13621.

PR 02-AUG-1996; 96US-0691791.

PR 25-AUG-1995; 95US-0002827.

PR 05-DEC-1995; 95US-0567200.

XX (GETH) GENENTECH INC.

XX Cunningham BC, Ferrara N, Keyt B, Li B, Nguyen FH;

PI Wells JA;

DR WPI; 1997-179270/16.

XX Vascular endothelial cell growth factor variant - used to identify

XX candidates having agonistic or antagonistic properties with respect

XX to KDR and/or FLT receptor binding

DR WPI; 1997-179270/16.
 XX Vascular endothelial cell growth factor variant - used to identify
 PT candidates having agonistic or antagonistic properties with respect
 PT to KDR and/or FLT receptor binding
 XX
 PS Claim 18; Page -: 130pp; English.
 XX
 CC AAW31085-W31096 are vascular endothelial growth factor (VEGF) variants.
 CC Especially preferred modifications comprise mutations in the kinase
 CC domain binding region (KDR) or the FMS-like tyrosine kinase binding
 CC region (FLT-1). All indicated residues are preferably replaced with
 CC alanine. The variants may be used in an assay for identifying
 CC candidate compositions having agonistic or antagonistic properties
 CC with respect to KDR and/or FLT receptor binding, by measuring the
 CC effect the candidate has on the binding properties of the variants
 CC to the KDR and/or FLT-1 receptors. Compositions identified may be
 CC useful for treating indications where vasculogenesis or angiogenesis
 CC is desired for treatment of an underlying disease state.
 CC N.B. This sequence is not given in the specification, it was created
 CC from a claimed specified mutant of wild-type mature VEGF.
 CC
 XX
 SQ Sequence 165 AA;
 Query Match 100.0%; Score 264; DB 18; Length 165;
 Best Local Similarity 100.0%; Pred. No. 1.3e-21;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 PCGPGCSERRKHLFVDPQTCCKSCNMTDSRCRKAROLELNERC 45
 Db 116 pcgpcseerrkhlfvdpqtcckscnmtdsrckarqlelnerc 160
 RESULT 10
 AAW31090
 ID AAW31090 standard; Protein; 165 AA.
 XX
 AC AAW31090;
 XX
 DT 16-JAN-1998 (first entry)
 XX
 DE Vascular endothelial growth factor variant used in drug screening.
 XX
 KW VEGF; vascular endothelial growth factor; variant; mutant;
 KW substitution; drug screening; kinase domain binding region; KDR;
 KW FMS-like tyrosine kinase binding region; FLT-1; drug screening;
 KW testing; vasculogenesis; angiogenesis; metastasis; cancer; tumour;
 KW neoplasia.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT MISC-difference 17 /note= "wild-type Phe replaced by Ala"
 FT MISC-difference 43 /note= "wild-type Ile replaced by Ala"
 FT MISC-difference 46 /note= "wild-type Ile replaced by Ala"
 FT MISC-difference 64 /note= "wild-type Ile replaced by Ala"
 FT MISC-difference 64 /note= "wild-type Glu replaced by Ala"
 FT MISC-difference 79 /note= "wild-type Glu replaced by Ala"
 FT MISC-difference 83 /note= "wild-type Ile replaced by Ala"
 FT MISC-difference 83 /note= "wild-type Ile replaced by Ala"
 XX
 PN WO9708313-A1.
 XX
 PD 06-MAR-1997.
 XX
 PF 23-AUG-1996; 96WO-US13621.
 XX

PR 02-AUG-1996; 96US-0691791.
 PR 25-AUG-1995; 95US-0002827.
 PR 05-DEC-1995; 95US-0567200.
 XX
 PA (GERTH) GENENTECH INC.
 XX
 XX Cunningham BC, Ferrara N, Keyt B, Li B, Nguyen FH;
 PI Wells JA;
 PI
 DR WPI; 1997-179270/16.
 XX
 PT Vascular endothelial cell growth factor variant - used to identify
 PT candidates having agonistic or antagonistic properties with respect
 PT to KDR and/or FLT receptor binding
 XX
 PS Claim 18; Page -: 130pp; English.
 XX
 CC AAW31085-W31096 are vascular endothelial growth factor (VEGF) variants.
 CC Especially preferred modifications comprise mutations in the kinase
 CC domain binding region (KDR) or the FMS-like tyrosine kinase binding
 CC region (FLT-1). All indicated residues are preferably replaced with
 CC alanine. The variants may be used in an assay for identifying
 CC candidate compositions having agonistic or antagonistic properties
 CC with respect to KDR and/or FLT receptor binding, by measuring the
 CC effect the candidate has on the binding properties of the variants
 CC to the KDR and/or FLT-1 receptors. Compositions identified may be
 CC useful for treating indications where vasculogenesis or angiogenesis
 CC is desired for treatment of an underlying disease state.
 CC N.B. This sequence is not given in the specification, it was created
 CC from a claimed specified mutant of wild-type mature VEGF.
 CC
 XX
 SQ Sequence 165 AA;
 Query Match 100.0%; Score 264; DB 18; Length 165;
 Best Local Similarity 100.0%; Pred. No. 1.3e-21;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 PCGPGCSERRKHLFVDPQTCCKSCNMTDSRCRKAROLELNERC 45
 Db 116 pcgpcseerrkhlfvdpqtcckscnmtdsrckarqlelnerc 160
 RESULT 11
 AAW31091
 ID AAW31091 standard; Protein; 165 AA.
 XX
 AC AAW31091;
 XX
 DT 16-JAN-1998 (first entry)
 XX
 DE Vascular endothelial growth factor variant used in drug screening.
 XX
 KW VEGF; vascular endothelial growth factor; variant; mutant;
 KW substitution; drug screening; kinase domain binding region; KDR;
 KW FMS-like tyrosine kinase binding region; FLT-1; drug screening;
 KW testing; vasculogenesis; angiogenesis; metastasis; cancer; tumour;
 KW neoplasia.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT MISC-difference 46 /note= "wild-type Ile replaced by Ala"
 FT MISC-difference 64 /note= "wild-type Glu replaced by Ala"
 FT MISC-difference 83 /note= "wild-type Ile replaced by Ala"
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 XX
 PN WO9708313-A1.
 XX
 PD 06-MAR-1997.
 XX

XX PF 23-AUG-1996; 96WO-US13621.
 XX PR 02-AUG-1996; 96US-0691791.
 XX PR 23-AUG-1995; 95US-0002827.
 XX PR 05-DEC-1995; 95US-0567200.
 XX (GETH) GENENTECH INC.
 XX PA Cunningham BC, Ferrara N, Keyt B, L1 B, Nguyen FH;
 XX PI Wells JA;
 XX DR WPI; 1997-179270/16.
 XX
 PT Vascular endothelial cell growth factor variant - used to identify
 PT candidates having agonistic or antagonistic properties with respect
 PT to KDR and/or FLT receptor binding
 XX
 XX PS Claim 22; Page -: 130pp; English.
 XX
 CC AAM31085-W31096 are vascular endothelial growth factor (VEGF) variants.
 CC Especially preferred modifications comprise mutations in the kinase
 CC domain binding region (KDR) or the FMS-like tyrosine kinase binding
 CC region (FLT-1). All indicated residues are preferably replaced with
 CC alanine. The variants may be used in an assay for identifying
 CC candidate compositions having agonistic or antagonistic properties
 CC with respect to KDR and/or FLT receptor binding, by measuring the
 CC effect the candidate has on the binding properties of the variants
 CC to the KDR and/or FLT-1 receptors. Compositions identified may be
 CC useful for treating indications where vasculogenesis or angiogenesis
 CC is desired for treatment of an underlying disease state.
 CC N.B. This sequence is not given in the specification, it was created
 CC from a claimed specified mutant of wild-type mature VEGF.
 XX
 SQ Sequence 165 AA;
 Query Match 100.0%; Score 264; DB 18; Length 165;
 Best Local Similarity 100.0%; Pred. No. 1.3e-21;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 PCGCSERRKHLFYODPOTCKSCKNMDSRCKAROLEINERTC 45
 Db 116 pcgcserrkhlfyqdpqtkcscnktsrckarqlnerctc 160
 RESULT 12
 ID AAM31092 standard; Protein: 165 AA.
 XX
 AC AAM31092;
 XX
 DT 16-JAN-1998 (first entry)
 XX
 DE Vascular endothelial growth factor variant used in drug screening.
 XX
 KW VEGF; vascular endothelial growth factor; variant; mutant;
 KW substitution; drug screening; kinase domain binding region; KDR;
 KW FMS-like tyrosine kinase binding region; FLT-1; drug screening;
 KW testing; vasculogenesis; angiogenesis; metastasis; cancer; tumour;
 KW neoplasia.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT MISC-difference 17 /note= "wild-type Phe replaced by Ala"
 FT MISC-difference 43 /note= "wild-type Ile replaced by Ala"
 FT MISC-difference 79 /note= "wild-type Gln replaced by Ala"
 FT
 XX

PN WO9708313-A1.
 XX
 PD 06-MAR-1997.
 XX
 XX PF 23-AUG-1996; 96WO-US13621.
 XX PR 02-AUG-1996; 96US-0691791.
 XX PR 25-AUG-1995; 95US-0002827.
 XX PR 05-DEC-1995; 95US-0567200.
 XX (GETH) GENENTECH INC.
 XX PA Cunningham BC, Ferrara N, Keyt B, L1 B, Nguyen FH;
 XX PI Wells JA;
 XX DR WPI; 1997-179270/16.
 XX
 PT Vascular endothelial cell growth factor variant - used to identify
 PT candidates having agonistic or antagonistic properties with respect
 PT to KDR and/or FLT receptor binding
 XX
 XX PS Claim 24; Page -: 130pp; English.
 XX
 CC AAM31085-W31096 are vascular endothelial growth factor (VEGF) variants.
 CC Especially preferred modifications comprise mutations in the kinase
 CC domain binding region (KDR) or the FMS-like tyrosine kinase binding
 CC region (FLT-1). All indicated residues are preferably replaced with
 CC alanine. The variants may be used in an assay for identifying
 CC candidate compositions having agonistic or antagonistic properties
 CC with respect to KDR and/or FLT receptor binding, by measuring the
 CC effect the candidate has on the binding properties of the variants
 CC to the KDR and/or FLT-1 receptors. Compositions identified may be
 CC useful for treating indications where vasculogenesis or angiogenesis
 CC is desired for treatment of an underlying disease state.
 CC N.B. This sequence is not given in the specification, it was created
 CC from a claimed specified mutant of wild-type mature VEGF.
 XX
 SQ Sequence 165 AA;
 Query Match 100.0%; Score 264; DB 18; Length 165;
 Best Local Similarity 100.0%; Pred. No. 1.3e-21;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 PCGCSERRKHLFYODPOTCKSCKNMDSRCKAROLEINERTC 45
 Db 116 pcgcserrkhlfyqdpqtkcscnktsrckarqlnerctc 160
 RESULT 13
 ID AAM31093 standard; Protein: 165 AA.
 XX
 AC AAM31093;
 XX
 DT 16-JAN-1998 (first entry)
 XX
 DE Vascular endothelial growth factor variant used in drug screening.
 XX
 KW VEGF; vascular endothelial growth factor; variant; mutant;
 KW substitution; drug screening; kinase domain binding region; KDR;
 KW FMS-like tyrosine kinase binding region; FLT-1; drug screening;
 KW testing; vasculogenesis; angiogenesis; metastasis; cancer; tumour;
 KW neoplasia.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT MISC-difference 43 /note= "wild-type Ile replaced by Ala"
 FT MISC-difference 46 /note= "wild-type Ile replaced by Ala"
 FT
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FT Misc-difference 79 /note= "wild-type Gln replaced by Ala"
FT Misc-difference 83 /note= "wild-type Ile replaced by Ala"
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XX
XX PD 06-MAR-1997 .
XX PE 23-AUG-1996; 96WO-US13621.
XX PR 02-AUG-1996; 96US-0691791.
XX PR 25-AUG-1995; 95US-0002827.
XX PR 05-DEC-1995; 95US-0567200.
XX
XX PA (GETH ) GENENTECH INC.
XX
XX P1 Cunningham BC, Ferrara N, Keyt B, Li B, Nguyen FH;
XX P1 Wells JA;
XX DR WPI; 1997-179270/16.
XX
XX PT Vascular endothelial cell growth factor variant - used to identify
XX PT candidates having agonistic or antagonistic properties with respect
XX PT to KDR and/or Flt receptor binding
XX PS
XX PS Claim 26; Page -: 130pp; English.
XX
XX AA AAW31085-W31096 are vascular endothelial growth factor (VEGF) variants.
XX CC Especially preferred modifications comprise mutations in the kinase
XX CC domain binding region (KDR) or the FMS-like tyrosine kinase binding
XX CC region (Flt-1). All indicated residues are preferably replaced with
XX CC alanine. The variants may be used in an assay for identifying
XX CC candidate compositions having agonistic or antagonistic properties
XX CC with respect to KDR and/or Flt receptor binding, by measuring the
XX CC effect the candidate has on the binding properties of the variants
XX CC to the KDR and/or Flt-1 receptors. Compositions identified may be
XX CC useful for treating indications where vasculogenesis or angiogenesis
XX CC is desired for treatment of an underlying disease state.
XX CC N.B. This sequence is not given in the specification, it was created
XX CC from a claimed specified mutant of wild-type mature VEGF.
XX
XX SQ Sequence 165 AA;
XX
OY_ 1 PCGPCSERKHLEFYDDPOTCKCCKNTDSRCAKOLEINERFCRC 45
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Db 116 pcgpcserkhlfvqdpqtckscnkntdsrcaqlnelnertcrc 160

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AAW31094 standard; Protein; 165 AA.
XX
XX AC AAW31094;
XX
XX DT 16-JAN-1998 (first entry)
XX
DE Vascular endothelial growth factor variant used in drug screening.
XX
XX VEFG; Vascular endothelial growth factor; variant; mutant;
XX KW substitution; drug screening; kinase domain binding region; KDR;
XX KW FMS-like tyrosine kinase binding region; Flt-1; drug screening;
XX KW testing; vasculogenesis; angiogenesis; metastasis; cancer; tumour;
XX KW neoplasia.
XX
XX OS Homo sapiens.
XX OS Synthetic.
XX
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FH	Key	Location/Qualifiers
FT	Misc-difference	17 /note= "wild-type Phe replaced by Ala"
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PN	W09708313-Al.	
XX		
PD	06-MAR-1997.	
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PF	23-AUG-1996;	96WO-US13621.
PR	02-AUG-1996;	96US-.0691791.
PR	25-AUG-1995;	95US-.0002827.
PR	05-DEC-1995;	95US-.0567200.
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PA	(GETH) GENENTECH INC.	
XX		
PI	Cunningham BC, Ferrara N, Keyt B, Li B, Nguyen FH,	
PI	Wells JA;	
XX		
DR	WP1: 1997-179270/16.	
XX		
PT	Vascular endothelial cell growth factor variant - used to identify candidates having agonistic or antagonistic properties with respect to KDR and/or Flt receptor binding	
XX		
PS	Claim 28; Page -: 130pp; English.	
XX		
CC	AAM31085-W31096 are vascular endothelial growth factor (VEGF) variants.	
CC	Especially preferred modifications comprise mutations in the kinase domain binding region (KDR) or the FMS-like tyrosine kinase binding region (FLT-1). All indicated residues are preferably replaced with alanine. The variants may be used in an assay for identifying candidate compositions having agonistic or antagonistic properties with respect to KDR and/or Flt receptor binding, by measuring the effect the candidate has on the binding properties of the variants to the KDR and/or Flt-1 receptors. Compositions identified may be useful for treating indications where vasculogenesis or angiogenesis is desired for treatment of an underlying disease state.	
CC	N.B. This sequence is not given in the specification, it was created from a claimed specified mutant of wild-type mature VEGF.	
CC		
SQ	Sequence	165 AA;
	Query Match	100.0%; Score 264; DB 18; Length 165;
	Best Local Similarity	100.0%; Pred. No. 1.3e-21;
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OY	1 PCGPGSERRKHLEFYDDPOTCKSCCNTSRCAROLELNERFCRC	45
Dd	116 pcgpgserrrkhlfygdptqtksccknldsrckarjleinerfcrc	160
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AC	AAM31095 standard; Protein: 165 AA.	
XX		
XX	AAM31095;	
DT	16-JAN-1998 (first entry)	
DE		
XX	Vascular endothelial growth factor variant used in drug screening.	
XX		
KV	VEGF; vascular endothelial growth factor; variant; mutant;	
KW	substitution; drug screening; kinase domain binding region; KDR;	
KM	FMS-like tyrosine kinase binding region; FLT-1; drug screening;	
XX	testing; vasculogenesis; angiogenesis; metastasis; cancer; tumour;	
neoplasia.		
Homo sapiens.		
Synthetic.		


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XX      Key      Location/Qualifiers
FH      Misc-difference 17
FT      /note= "wild-type Phe replaced by Ala"
FT      Misc-difference 46
FT      /note= "wild-type Ile replaced by Ala"
FT      Misc-difference 64
FT      /note= "wild-type Glu replaced by Ala"
FT      Misc-difference 83
FT      /note= "wild-type Ile replaced by Ala"
XX
XX      W09708313-A1.
XX
XX      06-MAR-1997.
XX
XX      23-AUG-1996; 96WO-US13621.
XX
XX      02-AUG-1996; 96US-0691791.
XX      25-AUG-1995; 95US-0002827.
XX      05-DEC-1995; 95US-0567200.
XX
XX      (GETH ) GENENTECH INC.
XX
XX      Cunningham BC, Ferrara N, Keyt B, Li B, Nguyen FH,
XX      Wells JA;
XX
XX      WPI; 1997-179270/16.
XX
XX      Vascular endothelial cell growth factor variant - used to identify
XX      candidates having agonistic or antagonistic properties with respect
XX      to KDR and/or FLT receptor binding
XX
XX      Claim 30; Page -: 130pp; English.
XX
XX      AAW31085-W31096 are vascular endothelial growth factor (VEGF) variants.
XX      Especially preferred modifications comprise mutations in the kinase
XX      domain binding region (KDR) or the FMS-like tyrosine kinase binding
XX      region (FLT-1). All indicated residues are preferably replaced with
XX      alanine. The variants may be used in an assay for identifying
XX      candidate compositions having agonistic or antagonistic properties
XX      with respect to KDR and/or FLT receptor binding, by measuring the
XX      effect the candidate has on the binding properties of the variants
XX      to the KDR and/or FLT-1 receptors. Compositions identified may be
XX      useful for treating indications where vasculogenesis or angiogenesis
XX      is desired for treatment of an underlying disease state.
XX      N.B. This sequence is not given in the specification, it was created
XX      from a claimed specified mutant of wild-type mature VEGF.
XX
XX      Sequence 165 AA;
XX
XX      Query Match      100.0%; Score 264; DB 18; Length 165;
XX      Best Local Similarity 100.0%; Pred. NO.1.3e-21;
XX      Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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XX      |||||||
XX      Db      116 pcgpcserikhlfvqdpqtkcscskntdsrckarqlelnertc 160

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Search completed: September 24, 2001, 16:14:26
 Job time: 82 sec

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GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.

OW protein - protein search, using sw model

Run on: September 24, 2001, 16:13:04 : Search time 24.64 Seconds
(Without alignments)
37.604 Million cell updates/sec

Title: US-09-579-420-1

Perfect score: 264
Sequence: 1 PCGPCSERRKHLFVODPOTC.....NTDSRCKARQLEINERTCRC 45

Scoring table: BLOSUM62
Gapop 10.0 , Gapect 0.5

Searched: 197339 seqs, 20590346 residues

Total number of hits satisfying chosen parameters: 197339

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Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	264	100.0	164	6	5194596-17 Patent No. 5194596
2	264	100.0	164	6	5219739-17 Patent No. 5219739
3	264	100.0	164	6	5219739-18 Patent No. 5219739
4	264	100.0	165	6	5194596-18 Patent No. 5194596
5	264	100.0	165	6	5219739-19 Patent No. 5219739
6	264	100.0	190	6	5332671-3 Patent No. 5332671
7	264	100.0	191	3	US-08-567-200A-2 Sequence 2, Appl1
8	264	100.0	191	3	US-08-807-992B-2 Sequence 2, Appl1
9	264	100.0	191	3	US-08-691-794-2 Sequence 2, Appl1
10	264	100.0	191	4	US-08-795-430-56 Sequence 56, Appl1
11	264	100.0	191	6	5332671-4 Patent No. 5332671
12	264	100.0	214	6	5240848-11 Patent No. 5240848
13	264	100.0	215	3	US-08-807-992B-3 Sequence 3, Appl1
14	264	100.0	215	4	US-08-586-039B-49 Sequence 49, Appl1
15	264	100.0	215	6	5219739-22 Patent No. 5219739
16	264	100.0	231	5	5240848-7 Patent No. 5240848
17	264	100.0	231	6	PCT-US96-09001-10 Sequence 10, Appl1
18	264	100.0	232	2	US-08-989-811-7 Sequence 7, Appl1
19	264	100.0	232	3	US-08-807-992B-4 Sequence 4, Appl1
20	264	100.0	232	3	US-09-042-105-7 Sequence 7, Appl1
21	258	97.7	232	2	US-08-824-996-9 Sequence 9, Appl1
22	249	94.3	189	1	US-08-469-427A-15 Sequence 15, Appl1
23	249	94.3	190	2	US-08-569-063C-20 Sequence 20, Appl1
24	249	94.3	214	4	US-08-586-039B-31 Sequence 31, Appl1
25	249	94.3	214	4	US-08-586-039B-35 Sequence 35, Appl1
26	115	43.6	55	1	US-08-469-427A-3 Sequence 3, Appl1
27	115	43.6	55	2	US-08-609-443B-3 Sequence 3, Appl1

28	115	43.6	55	2	US-08-569-063C-3 Sequence 3, Appl1
29	115	43.6	188	1	US-08-469-427A-5 Sequence 5, Appl1
30	115	43.6	188	2	US-08-609-443B-5 Sequence 5, Appl1
31	115	43.6	188	2	US-08-569-063C-5 Sequence 5, Appl1
32	115	43.6	195	1	US-08-469-427A-7 Sequence 7, Appl1
33	115	43.6	195	2	US-08-609-443B-7 Sequence 7, Appl1
34	115	43.6	195	2	US-08-569-063C-7 Sequence 7, Appl1
35	105	39.8	18	3	US-08-807-992B-28 Sequence 28, Appl1
36	103	39.0	188	1	US-08-469-427A-11 Sequence 11, Appl1
37	103	39.0	188	2	US-08-609-443B-11 Sequence 11, Appl1
38	103	39.0	188	2	US-08-569-063C-11 Sequence 11, Appl1
39	103	39.0	188	4	US-08-795-430-57 Sequence 57, Appl1
40	100	37.9	17	3	US-08-807-992B-29 Sequence 29, Appl1
41	79	29.9	350	2	US-08-999-811-4 Sequence 4, Appl1
42	79	29.9	350	2	US-08-824-996-2 Sequence 2, Appl1
43	79	29.9	350	3	US-09-042-105-4 Sequence 4, Appl1
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ALIGNMENTS

RESULT 1
5194596-17
; Patent No. 5194596
; APPLICANT: TISCHER, EDMUND G.; ABRAHAM, JUDITH A.; FIDDES, JOHN
; C. MITCHELL, RICHARD L.
; TITLE OF INVENTION: PRODUCTION OF VASCULAR ENDOTHELIAL CELL
; GROWTH FACTOR
; NUMBER OF SEQUENCES: 32
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/450,883
; FILING DATE: 14-DEC-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 387,545
; FILING DATE: 27-JUL-1989
; SEQ ID NO:17:
; LENGTH: 164
5194596-17

Query Match 100.0%; Score 264; DB 6; Length 164;
Best Local Similarity 100.0%; Pred. No. 1.2e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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; Patent No. 5219739
; APPLICANT: TISCHER, EDMUND G.; ABRAHAM, JUDITH A.; FIDDES,
; JOHN C.; MITCHELL, RICHARD L.
; TITLE OF INVENTION: DNA SEQUENCES ENCODING BVEGF120 AND
; HVEGF 121 AND METHODS FOR THE PRODUCTION OF BOVINE AND HUMAN
; VASCULAR ENDOTHELIAL CELL GROWTH FACTORS, BVEGF120 AND HVEGF121
; NUMBER OF SEQUENCES: 40
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/559,041
; FILING DATE: 27-JUL-1990
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 450,883
; FILING DATE: 14-DEC-1989
; APPLICATION NUMBER: 387,545
; FILING DATE: 27-JUL-1989
; SEQ ID NO:17:
; LENGTH: 164
5219739-17

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Query Match          100.0%; Score 264; DB 6; Length 164;
Best Local Similarity 100.0%; Pred. No. 1.2e-23;
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QY 1 PCGPGSERRKHLEFVDDPOTCKSCCKNTDSRCKAROLELNERTCRC 45
DB 115 PCGPGSERRKHLEFVDDPOTCKSCCKNTDSRCKAROLELNERTCRC 159

RESULT 3
5219739-18
Patent No. 5219739
APPLICANT: TISCHER, EDMUND G.; ABRAHAM, JUDITH A.; FIDDES,
JOHN C.; MITCHELL, RICHARD L.
TITLE OF INVENTION: DNA SEQUENCES ENCODING BVGEF120 AND
BVGEF 121 AND METHODS FOR THE PRODUCTION OF BOVINE AND HUMAN
VASCULAR ENDOTHELIAL CELL GROWTH FACTORS, BVGEF120 AND BVGEF121
NUMBER OF SEQUENCES: 40
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/559,041
FILING DATE: 27-JUL-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 450,883
FILING DATE: 14-DEC-1989
APPLICATION NUMBER: 387,545
FILING DATE: 27-JUL-1989
SEQ ID NO: 18
LENGTH: 164
5219739-18

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Best Local Similarity 100.0%; Pred. No. 1.2e-23;
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DB 115 PCGPGSERRKHLEFVDDPOTCKSCCKNTDSRCKAROLELNERTCRC 159

RESULT 4
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Patent No. 5194596
APPLICANT: TISCHER, EDMUND G.; ABRAHAM, JUDITH A.; FIDDES, JOHN
C.; MITCHELL, RICHARD L.
TITLE OF INVENTION: PRODUCTION OF VASCULAR ENDOTHELIAL CELL
GROWTH FACTOR
NUMBER OF SEQUENCES: 32
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/450,883
FILING DATE: 14-DEC-1989
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 387,545
FILING DATE: 27-JUL-1989
SEQ ID NO: 18
LENGTH: 165
5194596-18

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Best Local Similarity 100.0%; Pred. No. 1.2e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPGSERRKHLEFVDDPOTCKSCCKNTDSRCKAROLELNERTCRC 45
DB 116 PCGPGSERRKHLEFVDDPOTCKSCCKNTDSRCKAROLELNERTCRC 160

RESULT 5
5219739-19
Patent No. 5219739
APPLICANT: TISCHER, EDMUND G.; ABRAHAM, JUDITH A.; FIDDES,
JOHN C.; MITCHELL, RICHARD L.
```

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TITLE OF INVENTION: DNA SEQUENCES ENCODING BVGEF120 AND
BVGEF 121 AND METHODS FOR THE PRODUCTION OF BOVINE AND HUMAN
VASCULAR ENDOTHELIAL CELL GROWTH FACTORS, BVGEF120 AND BVGEF121
NUMBER OF SEQUENCES: 40
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/559,041
FILING DATE: 27-JUL-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 450,883
FILING DATE: 14-DEC-1989
APPLICATION NUMBER: 387,545
FILING DATE: 27-JUL-1989
SEQ ID NO: 19
LENGTH: 165
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Best Local Similarity 100.0%; Pred. No. 1.2e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPGSERRKHLEFVDDPOTCKSCCKNTDSRCKAROLELNERTCRC 45
DB 116 PCGPGSERRKHLEFVDDPOTCKSCCKNTDSRCKAROLELNERTCRC 160

RESULT 6
5332671-3
Patent No. 5332671
APPLICANT: FERRARA, NAPOLEONE; LEUNG, DAVID W. H.
TITLE OF INVENTION: PRODUCTION OF VASCULAR ENDOTHELIAL CELL
GROWTH FACTOR AND DNA ENCODING SAME
NUMBER OF SEQUENCES: 15
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/389,722
FILING DATE: 04-AUG-1989
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 369,424
FILING DATE: 21-JUN-1989
APPLICATION NUMBER: 351,117
FILING DATE: 12-MAY-1989
SEQ ID NO: 3
LENGTH: 190
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Best Local Similarity 100.0%; Pred. No. 1.3e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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RESULT 7
US-08-567-200A-2
Sequence 2, Application US/08567200A
Patent No. 6020473
GENERAL INFORMATION:
APPLICANT: Keyt, Bruce A.
APPLICANT: Nguyen, Francis H.
TITLE OF INVENTION: Variants of Vascular Endothelial Cell
TITLE OF INVENTION: Growth Factor, Their Uses, and Processes for their
NUMBER OF SEQUENCES: 42
CORRESPONDENCE ADDRESS:
ADDRESS: Fleury, Hohnach, Test, Albritton & Herbert
STREET: Four Embarcadero Center, Suite 3400
CITY: San Francisco
STATE: California
COUNTRY: United States
```

ZIP: 94111-4187
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/567,200A
FILING DATE: 05-DEC-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Dreger, Walter H.
REGISTRATION NUMBER: 24,190
REFERENCE/DOCKET NUMBER: A-62326-1/WHD
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 781-1989
TELEFAX: (415) 398-3249
TELEX: 910 277299
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 191 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-567-200A-2

Query Match 100.0%; Score 264; DB 3; Length 191;
Best Local Similarity 100.0%; Pred. No. 1.3e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 PCGCSERRKHLFVODPOTCKSCSKNTDSRCKAROLEINERTCRC 45
|||||
Db 142 PCGCSERRKHLFVODPOTCKSCSKNTDSRCKAROLEINERTCRC 186

RESULT 8
US-08-807-992B-2
Sequence 2, Application US/08807992B
Patent No. 6022541
GENERAL INFORMATION:
APPLICANT: Senger, Donald R
APPLICANT: Dvorak, Harold F
TITLE OF INVENTION: Immunological preparation for concurrent
TITLE OF INVENTION: specific binding to spatially exposed regions of vascular
TITLE OF INVENTION: permeability factor bound in-vivo to a tumor associated blood
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: David Prashker, Esq.
STREET: P.O. Box 5387
CITY: Magnolia
STATE: Massachusetts
COUNTRY: USA
ZIP: 01930
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50 inch, 1.40 Mb storage
COMPUTER: IBM PS/1
OPERATING SYSTEM: MS DOS
SOFTWARE: Wordperfect version 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/807,992B
FILING DATE: March 3, 1997
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: David Prashker, Esq.
REGISTRATION NUMBER: 29,693
REFERENCE/DOCKET NUMBER: BIS-033
TELECOMMUNICATION INFORMATION:
TELEPHONE: (978) 525-3794
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 191 amino acids

TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
US-08-807-992B-2

Query Match 100.0%; Score 264; DB 3; Length 191;
Best Local Similarity 100.0%; Pred. No. 1.3e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 PCGCSERRKHLFVODPOTCKSCSKNTDSRCKAROLEINERTCRC 45
|||||
Db 142 PCGCSERRKHLFVODPOTCKSCSKNTDSRCKAROLEINERTCRC 186

RESULT 9
US-08-691-794-2
Sequence 2, Application US/08691794
Patent No. 6057428
GENERAL INFORMATION:

APPLICANT: Keyt, Bruce A.
APPLICANT: Nguyen, Francis H.
APPLICANT: Ferrara, Napoleone
APPLICANT: Cunningham, Brian C.
APPLICANT: Wells, James A.
APPLICANT: Li, Bing
TITLE OF INVENTION: Variants of Vascular Endothelial Cell
TITLE OF INVENTION: Growth Factor, Their Uses, and Processes for their
NUMBER OF SEQUENCES: 45
CORRESPONDENCE ADDRESS:
ADDRESSEE: Flehr, Hohbach, Test, Albritton & Herbert
STREET: Four Embarcadero Center, Suite 3400
CITY: San Francisco
STATE: California
COUNTRY: United States
ZIP: 94111-4187

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/691,794
FILING DATE: 02-AUG-1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/002,827
FILING DATE: 25-AUG-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/567,200
FILING DATE: 05-DEC-1995
ATTORNEY/AGENT INFORMATION:
NAME: Dreger, Walter H.
REGISTRATION NUMBER: 24,190
REFERENCE/DOCKET NUMBER: A-63758/WHD
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 781-1989
TELEFAX: (415) 398-3249
TELEX: 910 277299
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 191 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-691-794-2

Query Match 100.0%; Score 264; DB 3; Length 191;
Best Local Similarity 100.0%; Pred. No. 1.3e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPGSERRKHLEFVODPOTCKSCSKNTDSRCKAROLELNERTCRC 45
DB 142 PCGPGSERRKHLEFVODPOTCKSCSKNTDSRCKAROLELNERTCRC 186

RESULT 10
US-08-795-430-56
Sequence 56, Application US/08795430
Patent No. 6130071
GENERAL INFORMATION:
APPLICANT: Altalo, Karl
APPLICANT: Joukov, Vladimir
TITLE OF INVENTION: Vascular Endothelial Growth Factor C (VEGF-C)
TITLE OF INVENTION: Protein and Gene, Mutants Thereof, and Uses Thereof
NUMBER OF SEQUENCES: 57
CORRESPONDENCE ADDRESS:
ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Botun
STREET: 6300 Sears Tower, 233 South Wacker Drive
CITY: Chicago
STATE: Illinois
COUNTRY: United States of America
ZIP: 60606-6402
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/795,430
FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR96/00427
FILING DATE: 01-AUG-1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/671,573
FILING DATE: 28-JUN-1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/601,132
FILING DATE: 14-FEB-1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/585,895
FILING DATE: 12-JAN-1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/510,133
FILING DATE: 01-AUG-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/340,011
FILING DATE: 14-NOV-1994
ATTORNEY/AGENT INFORMATION:
NAME: Gass, David A.
REGISTRATION NUMBER: 38,153
REFERENCE/DOCKET NUMBER: 28967/33691
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312/474-6300
TELEFAX: 312/474-0448
TELEX: 25-3856
INFORMATION FOR SEQ ID NO: 56:
SEQUENCE CHARACTERISTICS:
LENGTH: 191 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-795-430-56

Query Match 100.0%; Score 264; DB 4; Length 191;
Best Local Similarity 100.0%; Pred. No. 1.3e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 PCGPGSERRKHLEFVODPOTCKSCSKNTDSRCKAROLELNERTCRC 45
DB 142 PCGPGSERRKHLEFVODPOTCKSCSKNTDSRCKAROLELNERTCRC 186

DB 142 PCGPGSERRKHLEFVODPOTCKSCSKNTDSRCKAROLELNERTCRC 186

RESULT 11
5332671-4
Patent No. 5332671
APPLICANT: FERRARA, NAPOLEONE;LEUNG, DAVID W.H.
TITLE OF INVENTION: PRODUCTION OF VASCULAR ENDOTHELIAL CELL
GROWTH FACTOR AND DNA ENCODING SAME
NUMBER OF SEQUENCES: 15
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/389,722
FILING DATE: 04-AUG-1989
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 369,424
FILING DATE: 21-JUN-1989
APPLICATION NUMBER: 351,117
FILING DATE: 12-MAY-1989
SEQ ID NO:4
LENGTH: 191

Query Match 100.0%; Score 264; DB 6; Length 191;
Best Local Similarity 100.0%; Pred. No. 1.3e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPGSERRKHLEFVODPOTCKSCSKNTDSRCKAROLELNERTCRC 45
DB 142 PCGPGSERRKHLEFVODPOTCKSCSKNTDSRCKAROLELNERTCRC 186

RESULT 12
5240848-11
Patent No. 5240848
APPLICANT: KECK, PAMELA J.;CONNOLLY, DANIEL T.;FEDER, JOSEPH
TITLE OF INVENTION: DNA SEQUENCES ENCODING HUMAN VASCULAR
PERMEABILITY FACTOR HAVING 189 AMINO ACIDS
NUMBER OF SEQUENCES: 11
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/337,037
FILING DATE: 10-JUL-1989
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 274,061
FILING DATE: 21-NOV-1988
SEQ ID NO:11
LENGTH: 214

Query Match 100.0%; Score 264; DB 6; Length 214;
Best Local Similarity 100.0%; Pred. No. 1.5e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPGSERRKHLEFVODPOTCKSCSKNTDSRCKAROLELNERTCRC 45
DB 165 PCGPGSERRKHLEFVODPOTCKSCSKNTDSRCKAROLELNERTCRC 209

RESULT 13
US-08-807-992B-3
Sequence 3, Application US/08807992B
Patent No. 6022541
GENERAL INFORMATION:
APPLICANT: Senger, Donald R
APPLICANT: Dvorak, Harold F
TITLE OF INVENTION: Immunological preparation for concurrent
specific binding to spatially exposed regions of vascular
permeability factor bound in-vivo to a tumor associated blo
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: David Prashker, Esq.

STREET: P.O. Box 5387
CITY: Magnolia
STATE: Massachusetts
COUNTRY: USA
ZIP: 01930
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50 Inch, 1.40 Mb storage
COMPUTER: IBM PS/1
OPERATING SYSTEM: MS DOS
SOFTWARE: WordPerfect version 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/807,992B
FILING DATE: March 3, 1997
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: David Prashker, Esq.
REGISTRATION NUMBER: 29,693
REFERENCE/DOCKET NUMBER: BIS-033
TELECOMMUNICATION INFORMATION:
TELEPHONE: (978) 525-3794
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 215 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
US-08-807-992B-3

Query Match 100.0%; Score 264; DB 3; Length 215;
Best Local Similarity 100.0%; Pred. No. 1.5e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPCSERRKHLFVDDPOTCKSCSKNTDSRCKARQLEINERTCRC 45
|||||
DB 166 PCGPCSERRKHLFVDDPOTCKSCSKNTDSRCKARQLEINERTCRC 210

RESULT 14
US-08-586-039B-49
Sequence 49; Application US/08586039B
Patent No. 6140073
GENERAL INFORMATION:
APPLICANT: Bayne, Marvin L.
APPLICANT: Thomas Jr., Kenneth A.
TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR C
TITLE OF INVENTION: SUBUNIT
NUMBER OF SEQUENCES: 49
CORRESPONDENCE ADDRESS:
ADDRESSEE: Merck & Co., Inc.
STREET: 126 E. Lincoln Avenue
CITY: Rahway
STATE: New Jersey
COUNTRY: USA
ZIP: 07065-0900
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Microsoft Word 6
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/586,039B
FILING DATE: 16-JAN-1996
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/124,259
FILING DATE: 20-SEP-1993
APPLICATION NUMBER: 07/676,436
FILING DATE: 28-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: Hand, J. Mark
REGISTRATION NUMBER: 36,545
REFERENCE/DOCKET NUMBER: 18361DA

TELECOMMUNICATION INFORMATION:
TELEPHONE: (908) 594-3905
TELEFAX: (908) 594-4720
INFORMATION FOR SEQ ID NO: 49:
SEQUENCE CHARACTERISTICS:
LENGTH: 215 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-586-039B-49

Query Match 100.0%; Score 264; DB 4; Length 215;
Best Local Similarity 100.0%; Pred. No. 1.5e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPCSERRKHLFVDDPOTCKSCSKNTDSRCKARQLEINERTCRC 45
|||||
DB 166 PCGPCSERRKHLFVDDPOTCKSCSKNTDSRCKARQLEINERTCRC 210

RESULT 15
5219739-22
Patent No. 5219739
APPLICANT: TISCHER, EDMUND G.; ABRAHAM, JUDITH A.; FIDDES,
JOHN C.; MITCHELL, RICHARD L.
TITLE OF INVENTION: DNA SEQUENCES ENCODING BVESF120 AND
HVEGF 121 AND METHODS FOR THE PRODUCTION OF BOVINE AND HUMAN
VASCULAR ENDOTHELIAL CELL GROWTH FACTORS, BVESF120 AND HVEGF121
NUMBER OF SEQUENCES: 40
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/559,041
FILING DATE: 27-JUL-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 450,883
FILING DATE: 14-DEC-1989
APPLICATION NUMBER: 387,545
FILING DATE: 27-JUL-1989
SEQ ID NO: 22
LENGTH: 215
5219739-22

Query Match 100.0%; Score 264; DB 6; Length 215;
Best Local Similarity 100.0%; Pred. No. 1.5e-23;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPCSERRKHLFVDDPOTCKSCSKNTDSRCKARQLEINERTCRC 45
|||||
DB 166 PCGPCSERRKHLFVDDPOTCKSCSKNTDSRCKARQLEINERTCRC 210

Search completed: September 24, 2001, 16:13:37
Job time: 33 sec

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GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 24, 2001, 16:13:04 ; Search time 27.18 Seconds
(without alignments)
126.117 Million cell updates/sec

Title: US-09-579-420-1
Perfect score: 264
Sequence: 1 PCGPCSERKHLFVODPQTC.....NTDSRCKARQLEINERTCRC 45

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 219241 seqs, 76174552 residues

Total number of hits satisfying chosen parameters: 219241

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :
1: p1r1:*
2: p1r2:*
3: p1r3:*
4: p1r4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	264	100.0	190	2 S52130	vascular endotheli
2	264	100.0	190	2 B40080	vascular endotheli
3	264	100.0	232	2 A41551	vascular endotheli
4	249	94.3	190	2 B44881	vascular endotheli
5	249	94.3	190	2 A35987	glioma-derived vas
6	249	94.3	214	2 A44881	vascular endotheli
7	115	43.6	188	2 JC4680	vascular endotheli
8	111	42.0	128	2 F51295	vascular endotheli
9	79	29.9	419	2 S69207	vascular endotheli
10	70.5	26.7	1187	2 T18355	vascular endotheli
11	68	25.8	1700	2 S08167	hypothetical prote
12	65	24.6	1188	2 D86236	Balb3n1 ring 3 pr
13	64.5	24.4	3707	2 S18252	heparan sulfate pr
14	60	22.7	1808	2 T15099	hypothetical prote
15	59	22.3	160	2 J00542	165k secretory pro
16	59	22.3	220	2 S29155	antistatin - Hydra
17	58.5	22.2	810	2 D46260	plasmin (EC 3.4.21
18	58	22.0	83	2 D84697	hypothetical prote
19	58	22.0	3084	1 MMMSA	laminin alpha-1 ch
20	57.5	21.8	146	1 S24049	phospholipase A2 (
21	57.5	21.8	603	1 S28941	coagulation factor
22	57.5	21.8	4391	2 A38096	perlecan precursor
23	57	21.6	2195	2 T34264	hypothetical prote
24	56.5	21.4	145	2 T15608	hypothetical prote
25	56.5	21.4	202	2 T50635	hypothetical prote
26	56.5	21.4	469	2 C71373	probable oxalacet
27	56.5	21.4	902	2 T10093	nitrogenase (EC 1.
28	56.5	21.4	902	2 T01127	curly leaf protein
29	56.5	21.4	934	1 A34372	complement C6 prec

30	56	21.2	342	2 T16735	hypothetical prote
31	56	21.2	428	2 A55044	beta-4C-adrenergic
32	56	21.2	558	2 J05878	plasma hyaluronan-
33	56	21.2	655	1 A46688	hepatocyte growth
34	56	21.2	899	2 D96594	unknown protein, 7
35	55.5	21.0	454	2 S16565	noli protein - Rhi
36	55.5	21.0	3106	1 S53868	laminin alpha-2 ch
37	55	20.8	166	2 E71907	hypothetical prote
38	55	20.8	317	2 T51204	hypothetical prote
39	55	20.8	348	2 T28623	hypothetical prote
40	55	20.8	349	2 D72175	G2R protein - Vari
41	55	20.8	349	2 D36858	gene G4R protein -
42	55	20.8	447	2 T21716	hypothetical prote
43	55	20.8	497	2 T06727	hypothetical prote
44	55	20.8	686	3 J07569	Delta-4 protein -
45	55	20.8	720	2 T02457	hypothetical prote

ALIGNMENTS

```

RESULT 1
S52130
vascular endothelial growth factor - pig
C:Species: Sus scrofa domestica (domestic pig)
C:Date: 14-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 05-Nov-1999
C:Accession: S52130
R:Sharma, H.S.; Tang, Z.H.; Gho, B.C.G.; Verdouw, P.D.
Biochim. Biophys. Acta 1260, 235-238, 1995
A:Title: Nucleotide sequence and expression of the porcine vascular endothelial growt
A:Reference number: S52130; MUID:95143284
A:Accession: S52130
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-190 <SHA>
A:Cross-references: GB:X81380; NID:9587559; PIDN:CAA57143.1; PID:9587560

Query Match 100.0%; Score 264; DB 2; Length 190;
Best Local Similarity 100.0%; Pred. No. 1.7e-21;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 PCGPCSERKHLFVODPQTCCKSCNKNTDSRCKARQLEINERTCRC 45
Db 141 PCGPCSERKHLFVODPQTCCKSCNKNTDSRCKARQLEINERTCRC 185

RESULT 2
B40080
vascular endothelial growth factor precursor (version 2) - bovine
C:Species: Bos primigenius taurus (cattle)
C:Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 05-Nov-1999
C:Accession: B40080; B33787; A33255
R:Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.
Science 246, 1306-1309, 1989
A:Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.
A:Reference number: A40080; MUID:96069608
A:Accession: B40080
A:Molecule type: mRNA
A:Residues: 1-190 <LEU>
A:Cross-references: GB:M32976; NID:9163006; PIDN:AAA30502.1; PID:9163007
R:Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Cr
Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989
A:Title: Vascular endothelial growth factor: a new member of the platelet-derived gro
A:Reference number: A33787; MUID:90121225
A:Accession: B33787
A:Molecule type: mRNA
A:Residues: 27-190 <RTS>
A:Cross-references: GB:M11836; NID:9163808; PIDN:AAA30804.1; PID:9163809
R:Ferrara, N.; Henzel, W.J.
Biochem. Biophys. Res. Commun. 161, 851-858, 1989
A:Title: Pituitary follicular cells secrete a novel heparin-binding growth factor spe
A:Reference number: A33255; MUID:89286596

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A:Accession: A33255
A:Molecule type: protein
A:Residues: 27-31 <FER>
C:Keywords: alternative splicing; glycoprotein
F:1-26/Domain: signal sequence #status predicted <Sig>
F:27-30/Product: vascular endothelial growth factor #status predicted <M>
F:100/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 100.0%; Score 264; DB 2; Length 190;
Best Local Similarity 100.0%; Pred. No. 1.7e-21;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PCGPGSERRKHLFVDPDPTCKSCKNTDSRCKAROLELNERC 45
DB 141 PCGPGSERRKHLFVDPDPTCKSCKNTDSRCKAROLELNERC 185

RESULT 3
A:1551
vascular endothelial growth factor 206 precursor - human
N:Alternate names: vascular permeability factor
N:Contains: vascular endothelial growth factor 121 (VEGF 121); VEGF 165; VEGF 189; VEGF
C:Species: Homo sapiens (man)
C>Date: 28-Aug-1992 #sequence, revision 28-Aug-1992 #text, change 05-Nov-1999
C:Accession: A41551; C41551; B41551; A40454; B40454; A40079; A40080; JQ1463; JQ1
R:Housek, K.A.; Ferrara, N.; Winer, J.; Cachianes, G.; Li, B.; Leung, D.W.
Mol. Endocrinol. 5, 1806-1814, 1991
A:Title: The vascular endothelial growth factor family: identification of a fourth molec
A:Accession: A41551; MUID:92168017
A:Molecule type: mRNA
A:Residues: 1-232 <HOU1>
A:Cross-references: GB:M58192; NID:9246155; PID:9246156
A:Accession: C41551
A:Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-140, 'N', 183-232 <HOU2>
A:Accession: B41551
A:Status: nucleic acid sequence not shown; not compared with conceptual translation
A:Molecule type: mRNA
A:Residues: 1-141, 227-232 <HOU>
R:Tischer, E.; Mitchell, R.; Hartman, T.; Silva, M.; Gospodarowicz, D.; Fiddes, J.C.; Ab
J. Biol. Chem. 266, 11947-11954, 1991
A:Title: The human gene for vascular endothelial growth factor. Multiple protein forms a
A:Reference number: A40454; MUID:91268072
A:Accession: A40454
A:Molecule type: DNA
A:Residues: 1-165, 183-232 <TI1>
A:Cross-references: GB:M63972; GB:M63973; GB:M63975; GB:M63976; GB
A:Accession: B40454
A:Molecule type: DNA
A:Residues: 1-140, 'N', 183-232 <TI2>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB
A:Accession: C40454
A:Molecule type: DNA
A:Residues: 1-141, 227-232 <TI3>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63978
R:Keck, P.J.; Hauser, S.D.; Krivi, G.; Sanzo, K.; Warren, T.; Feder, J.; Connolly, D.T.
Science 246, 1309-1312, 1989
A:Title: Vascular permeability factor, an endothelial cell mitogen related to PDGF.
A:Reference number: A40079; MUID:90069609
A:Accession: A40079
A:Status: not compared with conceptual translation
A:Molecule type: mRNA
A:Residues: 1-165, 183-232 <KEC>
A:Cross-references: GB:M27281; NID:9340300; PIDN:AAA36807.1; PID:9340301
R:Leung, D.W.; Cachianes, G.; Kiang, W.-J.; Goeddel, D.V.; Ferrara, N.
Science 246, 1306-1309, 1989
A:Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.
A:Reference number: A40080; MUID:90069608
A:Accession: A40080
A:Status: not compared with conceptual translation

A:Molecule type: mRNA
A:Residues: 1-140, 'N', 183-232 <LEU>
A:Cross-references: GB:M32977; NID:9181970; PIDN:AAA35789.1; PID:9181971
R:Weindel, K.; Marne, D.; Welch, H.A.
Biochem. Biophys. Res. Commun. 183, 1167-1174, 1992
A:Title: AIDS-associated Kaposi's sarcoma cells in culture express vascular endotheli
A:Reference number: JQ1463; MUID:92231879
A:Accession: JQ1463
A:Molecule type: mRNA
A:Residues: 1-140, 'N', 183-232 <ME1>
A:Cross-references: EMBL:X62568; NID:937658; PIDN:CAA44447.1; PID:937659
A:Experimental source: AIDS-Kaposi's sarcoma cell
A:Accession: JQ1464
A:Molecule type: mRNA
A:Residues: 1-140, 'N', 227-232 <ME2>
A:Experimental source: AIDS-Kaposi's sarcoma cell
A:Connolly, D.T.; Olander, J.V.; Heuvelman, D.; Nelson, R.; Monsell, R.; Siegel, N.;
J. Biol. Chem. 264, 20017-20024, 1989
A:Title: Human vascular permeability factor. Isolation from U937 cells.
A:Reference number: A34492; MUID:90062112
A:Accession: A34492
A:Molecule type: protein
A:Residues: 27-36; 43-49, 'R', 72-76, 'Q', 78-81; 59-71 <CON>
C:Comment: The most common of several alternatively spliced forms is VEGF 165.
C:Genetics:
A:Gene: VEGF
A:Cross-references: GDB:132244; OMIM:192240
A:Map position: 6p21-6p12
C:Function:
A:Description: promotes fluid and protein leakage from blood vessels
C:Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; extracellular
F:1-232/Product: vascular endothelial growth factor 206 precursor #status predicted <
F:1-165, 183-232/Product: vascular endothelial growth factor 189 precursor #status pre
F:1-141, 227-232/Product: vascular endothelial growth factor 121 precursor #status pre
F:1-26/Domain: signal sequence #status predicted <Sig>
F:101/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 100.0%; Score 264; DB 2; Length 232;
Best Local Similarity 100.0%; Pred. No. 2e-21;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PCGPGSERRKHLFVDPDPTCKSCKNTDSRCKAROLELNERC 45
DB 183 PCGPGSERRKHLFVDPDPTCKSCKNTDSRCKAROLELNERC 227

RESULT 4
B44881
vascular endothelial growth factor-1 precursor - mouse
C:Species: Mus musculus (house mouse)
C>Date: 03-Feb-1994 #sequence, revision 03-Feb-1994 #text, change 05-Nov-1999
C:Accession: B44881; A43351; A61029
R:Freier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
Development 114, 521-532, 1992
A:Title: Expression of vascular endothelial growth factor during embryonic angiogenesis
A:Reference number: A44881; MUID:9224860
A:Accession: B44881
A:Molecule type: mRNA
A:Residues: 1-190 <BRE>
A:Cross-references: GB:S38083; NID:9249858; PIDN:AA82253.1; PID:9249859
A:Experimental source: embryo
A:Note: sequence extracted from NCBI backbone (NCBIN:107622, NCBI:107623)
R:Claflay, K.P.; Wilkison, W.O.; Spiegelman, B.M.
J. Biol. Chem. 267, 16317-16322, 1992
A:Title: Vascular endothelial growth factor. Regulation by cell differentiation and a
A:Reference number: A43351; MUID:92355593
A:Accession: A43351
A:Molecule type: mRNA
A:Residues: 1-116, 'ER', 119-190 <CIA>
A:Cross-references: GB:M95200; NID:9202350; PIDN:AAA40547.1; PID:9202351
A:Note: sequence extracted from NCBI backbone (NCBIN:110665, NCBI:110675)
R:Rosenthal, R.A.; Megyesi, J.F.; Henzel, W.J.; Ferrara, N.; Folkman, J.

Growth Factors 4, 53-59, 1990
A:Title: Conditioned medium from mouse sarcoma 180 cells contains vascular endothelial growth factor
A:Reference number: A61029; MUID:91197543
A:Accession: A61029
A:Molecule type: protein
A:Residues: 27-38 <ROS>
C:Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; glycoprotein; mit

Query Match 94.3%; Score 249; DB 2; Length 190;
Best Local Similarity 97.7%; Pred. No. 7.1e-20;
Matches 43; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 2 CGPCSERRKHLFVDDPOTCKCCKNTDSRCAROLELNEPRTCRC 45
DB 142 CEPSERRKHLFVDDPOTCKCCKNTDSRCAROLELNEPRTCRC 185

RESULT 5
A35987
glloma-derived vascular endothelial cell growth factor - rat
C:Species: Rattus norvegicus (Norway rat)
C:Date: 16-Nov-1990 #sequence_revision 16-Nov-1990 #text_change 05-Nov-1999
C:Accession: A35987
R:Conn, G.; Bayne, M.L.; Soderman, D.D.; Kwok, P.W.; Sullivan, K.A.; Palisi, T.M.; Hope, P.; Proc. Natl. Acad. Sci. U.S.A. 87, 2628-2632, 1990
A:Title: Amino acid and cDNA sequences of a vascular endothelial cell mitogen that is homologous to the rat growth factor
A:Reference number: A35987; MUID:9020249
A:Accession: A35987
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-190 <CON>
A:Cross-references: GB:M32167; NID:g204287; PIDN:AAA41211.1; PID:g204288

Query Match 94.3%; Score 249; DB 2; Length 190;
Best Local Similarity 97.7%; Pred. No. 7.1e-20;
Matches 43; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 2 CGPCSERRKHLFVDDPOTCKCCKNTDSRCAROLELNEPRTCRC 45
DB 142 CEPSERRKHLFVDDPOTCKCCKNTDSRCAROLELNEPRTCRC 185

RESULT 6
A44881
vascular endothelial growth factor-3 precursor - mouse
N:Contans: vascular endothelial growth factor-2; vascular permeability factor
C:Species: Mus musculus (house mouse)
C:Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 08-Oct-1999
C:Accession: A44881; C44881; A60932; S52136
R:Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
Development 114, 521-532, 1992
A:Title: Expression of vascular endothelial growth factor during embryonic angiogenesis
A:Reference number: A44881; MUID:92274860
A:Accession: A44881
A:Molecule type: mRNA
A:Residues: 1-214 <BBRE>
A:Cross-references: GB:S37052; NID:g249856; PIDN:AB22252.1; PID:g249857
A:Experimental source: embryo
A:Note: sequence extracted from NCBI backbone (NCBIN:104677, NCBIIP:104678)
A:Accession: C44881
A:Molecule type: mRNA
A:Residues: 1-140,209-214 <BR2>
A:Cross-references: GB:S38100; NID:g249860; PIDN:AB22254.1; PID:g249861
A:Note: sequence extracted from NCBI backbone (NCBIN:107624, NCBIIP:107625)
R:Clausen, M.; Gerlach, M.; Gerlach, H.; Bretl, J.; Wang, F.; Familletti, P.C.; Pan, Y.C.; J. Exp. Med. 172, 1535-1545, 1990
A:Title: Vascular permeability factor: a tumor-derived polypeptide that induces endothelial permeability
A:Reference number: A60932; MUID:91079755
A:Accession: A60932
A:Molecule type: protein
A:Residues: 27-33 <CLA>

R:Sugihara, T.; Kaul, S.C.; Mitsui, Y.; Madhwa, R.
Biochim. Biophys. Acta 1224, 365-370, 1994
A:Title: Enhanced expression of multiple forms of VEGF is associated with spontaneous tumor growth
A:Reference number: S52136; MUID:95101726
A:Accession: S52136
A:Status: preliminary
A:Molecule type: protein
A:Residues: 27-46 <SUG>

C:Comment: Homodimers could be demonstrated for recombinant VEGF-2 but not VEGF-3.
C:Keywords: alternative splicing; angiogenesis; disulfide bond; glycoprotein; homodimer
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-214/Product: vascular endothelial growth factor-3 #status experimental <MAT>

Query Match 94.3%; Score 249; DB 2; Length 214;
Best Local Similarity 97.7%; Pred. No. 7.7e-20;
Matches 43; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 2 CGPCSERRKHLFVDDPOTCKCCKNTDSRCAROLELNEPRTCRC 45
DB 166 CEPSERRKHLFVDDPOTCKCCKNTDSRCAROLELNEPRTCRC 209

RESULT 7
JC4680
vascular endothelial growth factor-related factor 167 precursor - mouse
N:Alternate names: VRF 167 protein
C:Species: Mus musculus (house mouse)
C:Date: 10-May-1996 #sequence_revision 19-Jul-1996 #text_change 05-Nov-1999
C:Accession: JC4680
R:Townson, S.; Lagercrantz, J.; Grimmond, S.; Sillins, G.; Nordenskjold, M.; Weber, G.
Biochem. Biophys. Res. Commun. 220, 922-928, 1996
A:Title: Characterization of the murine VEGF-related factor gene.
A:Reference number: JC4679; MUID:96183052
A:Accession: JC4680
A:Molecule type: mRNA
A:Residues: 1-188 <TOW>

A:Cross-references: GB:U43837; NID:g1314335; PIDN:AMC5253.1; PID:g1314336
C:Comment: This factor is a mitogen, that is selective for endothelial cells, and belongs to the vascular endothelial growth factor family.
A:Genetics: vrf
A:Gene: vrf
A:Map position: 19
A:Introns: 137/2
F:1-21/Domain: signal sequence #status predicted <SIG>
F:22-188/Product: vascular endothelial growth factor-related factor #status predicted

Query Match 43.6%; Score 115; DB 2; Length 188;
Best Local Similarity 46.7%; Pred. No. 1.6e-05;
Matches 21; Conservative 7; Mismatches 13; Indels 4; Gaps 2;

OY 2 CGPCSERRKHLFVDDPOTCKCCKNTDSRCAROLELNEPRTCRC 45
DB 142 CPPCQRROR--DPRFCRCRCRRRRFLHCGRGLELNEPRTCRC 183

RESULT 8
I51295
vascular endothelial growth factor - quail (fragment)
C:Species: Phasianidae gen. sp. (quail)
C:Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 28-Feb-1997
C:Accession: I51295
R:Flamme, I.; Breier, G.; Risau, W.
Dev. Biol. 169, 699-712, 1995
A:Title: Vascular endothelial growth factor (VEGF) and VEGF receptor 2 (flk-1) are expressed in the developing chick embryo
A:Reference number: I51295; MUID:95301109
A:Accession: I51295
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-128 <FLA>
A:Cross-references: GB:S78343; NID:g999147; PID:g999148
C:Genetics:

Mon Sep 24 16:32:25 2001

Db 100 NDRVCSG 106

Search completed: September 24, 2001, 16:15:01
Job time: 117 sec

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us-09-579-420-1.rpr

GenCore version 4.5
Copyright (c) 1993 - 2000 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: September 24, 2001, 16:13:04; Search time 45.8 Seconds
(without alignments)
129.994 Million cell updates/sec

Title: US-09-579-420-1
Perfect score: 264
Sequence: 1 PGPSCERRKHLFVDDPQTC.....NTDSRCKARQLELNERTCNC 45

Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5

Searched: 425026 seqs, 132305027 residues

Total number of hits satisfying chosen parameters: 425026

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database: SPTREMBL_16:
1: sp_archaea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_unclassified:*
13: sp_vertebrate:*
14: sp_virus:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	264	100.0	102	6	Q9XT61 macaca fasc
2	264	100.0	190	6	077643 ovis aries
3	264	100.0	190	6	Q9XSP3 canis famill
4	264	100.0	190	6	Q9GLE2 sus scrofa
5	264	100.0	190	6	Q9GKR0 equus cabal
6	264	100.0	208	6	Q9XSP4 canis famill
7	264	100.0	209	6	060720 homo sapien
8	264	100.0	214	6	Q9XSP5 canis famill
9	264	100.0	214	6	Q9MYV3 canis famill
10	264	100.0	232	4	Q9H1W9 homo sapien
11	264	100.0	234	4	Q16889 homo sapien
12	257	97.3	191	6	Q75875 homo sapien
13	255	96.6	123	6	Q9N1S1 capreolus c
14	249	94.3	102	11	063672 ratius norv
15	249	94.3	142	11	Q9ERL6 mesocricetu
16	249	94.3	190	11	Q9QX39 spalax leuc
17	249	94.3	214	11	Q9QXG7 xenopus lae
18	228	86.4	194	13	042572 brachydanto
19	204	77.3	188	13	073682

20	193	73.1	174	4	Q9UL23	Q9UL23 homo sapien
21	167.5	63.4	110	11	088911	088911 ratius norv
22	139	52.7	124	6	Q9GK00	Q9GK00 callithrix
23	108	40.9	188	6	Q9XSA8	Q9XSA8 bos taurus
24	87	33.0	150	11	034881	034881 ratius norv
25	77	29.2	420	6	Q9XSS0	Q9XSS0 bos taurus
26	74.5	28.2	1704	5	Q94446	Q94446 chironomus
27	71	26.9	1698	5	Q94438	Q94438 chironomus
28	70.5	26.7	1187	2	049549	049549 mycoplasma
29	66	25.0	1418	13	057352	057352 cocurnix co
30	65	24.6	1188	10	Q9S1S9	Q9S1S9 arabidopsis
31	63.5	24.1	315	13	Q9W6E0	Q9W6E0 brachydanto
32	63.5	24.1	333	5	Q97139	Q97139 dictyostell
33	63.5	24.1	403	5	Q9GPR6	Q9GPR6 dictyostell
34	61.5	23.3	301	5	Q9VWP6	Q9VWP6 drosoophila
35	61.5	23.3	747	10	Q9ICM8	Q9ICM8 oryza sativ
36	61	23.1	280	14	Q87009	Q87009 subterranea
37	60	22.7	1808	5	044565	044565 caenorhabdi
38	59.5	22.5	77	5	Q23771	Q23771 chironomus
39	59.5	22.5	299	4	Q9H192	Q9H192 homo sapien
40	59	22.3	829	11	Q9R1V7	Q9R1V7 mus musculu
41	59	22.3	832	4	075077	075077 homo sapien
42	58.5	22.2	896	10	Q9ZS22	Q9ZS22 glycine max
43	58	22.0	282	14	Q9Z0D4	Q9Z0D4 milk vetch
44	58	22.0	452	4	Q9NU63	Q9NU63 homo sapien
45	58	22.0	1587	4	Q9Y6N6	Q9Y6N6 homo sapien

ALIGNMENTS

RESULT	1	PRELIMINARY:	PRT:	102 AA.
Q9XT61	Q9XT61			
AC	Q9XT61:			
DT	01-NOV-1999 (TREMBLrel. 12, Created)			
DT	01-NOV-1999 (TREMBLrel. 12, Last sequence update)			
DT	01-OCT-2000 (TREMBLrel. 15, Last annotation update)			
DE	VASCULAR ENDOTHELIAL GROWTH FACTOR (FRAGMENT).			
CN	VEGF.			
OS	Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).			
OC	Eukaryota; Metazoa; Chordata; Craniala; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Cercopitheidae;			
OC	Cercopitheidae; Macaca.			
OX	NCBI_TaxID=9541;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=LUNG;			
RA	Kim I.K., Ryan A.M., Rohan R., Amano S., Aguilar S., Miller J.W.,			
RA	Adams A.P.;			
RT	*Constitutive expression of VEGF, VEGFR-1 and VEGFR-2 in normal			
RT	eyes.;			
RL	Submitted (NOV-1998) to the EMBL/GenBank/DBJ databases.			
DR	EMBL; AF106942; AAD20589.1; -			
DR	HSSP; P15692; 2VPF.			
DR	InterPro; IPR000072; -			
DR	Pfam; PF00341; PDGF; 1.			
FT	NOV_TER			
SO	SEQUENCE 102 AA; 12065 MW; 5F2D1A765DC29E02 CRC64;			
Query Match	100.0%; Score 264; DB 6; Length 102;			
Best Local Similarity	100.0%; Pred. NO. 1.le-28;			
Matches 45; Conservative	0; Mismatches 0; Indels 0; Gaps 0;			
QY	1 PGPSCERRKHLFVDDPQTCCKSCNTDSRCKARQLELNERTCNC 45			
DB	53 PGPSCERRKHLFVDDPQTCCKSCNTDSRCKARQLELNERTCNC 97			
RESULT	2	PRELIMINARY:	PRT:	190 AA.
Q77643	Q77643			

AC 07643:
 DT 01-NOV-1998 (TREMBLrel. 08, Created)
 DT 01-NOV-1998 (TREMBLrel. 08, Last sequence update)
 DT 01-MAR-2001 (TREMBLrel. 16, Last annotation update)
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR.
 GN VEGF.
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecota; Bovidae;
 OC Bovidae; Caprinae; Ovis.
 OX NCBI_TaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=COLUMBIA-RAMBOULLET;
 RA Cheung C.Y., Brace R.A.;
 RT "Ovine vascular endothelial growth factor: Nucleotide sequence and
 expression in fetal tissues."
 RT Growth Factors 0:0-0(1998).
 RL EMBL: AF071015; AAC23608.1; -.
 DR HSP; P15692; 1VG.
 DR InterPro: IPR000072; -.
 DR Pfam: PF00341; PDGF; 1.
 DR ProDom: PD001629; -. 1.
 DR PROSITE: PS00249; PDGF_1; 1.
 DR PROSITE: PS00278; PDGF_2; 1.
 DR SMART: SM00141; PDGF; 1.
 SQ SEQUENCE 190 AA; 22342 MW; 0D5E3B3E5C3E739 CRC64;

Query Match 100.0%; Score 264; DB 6; Length 190;
 Best Local Similarity 100.0%; Pred. No. 1.9e-28;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PCGPGSERRKHLFVDPOTCKSCKNTDSRCKAROLELNERC 45
 DB 141 PCGPGSERRKHLFVDPOTCKSCKNTDSRCKAROLELNERC 185

RESULT 3
 AC 09XSF3 PRELIMINARY; PRT; 190 AA.
 DT 01-NOV-1999 (TREMBLrel. 12, Created)
 DT 01-NOV-1999 (TREMBLrel. 12, Last sequence update)
 DT 01-MAR-2001 (TREMBLrel. 16, Last annotation update)
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR 164.
 GN VEGF.
 OS Canis familiaris (Dog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
 OX NCBI_TaxID=9615;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=HEART;
 RA Jjingling L., Roque R.S.;
 RL Submitted (MAR-1999) to the EMBL/Genbank/DBJ databases.
 DR EMBL: AF133248; AAD29682.1; -.
 DR HSP; P15692; 1VG.
 DR InterPro: IPR000072; -.
 DR Pfam: PF00341; PDGF; 1.
 DR ProDom: PD001629; -. 1.
 DR PROSITE: PS00249; PDGF_1; 1.
 DR PROSITE: PS00278; PDGF_2; 1.
 DR SMART: SM00141; PDGF; 1.
 SQ SEQUENCE 190 AA; 22292 MW; 2053500BC9085CE0 CRC64;

Query Match 100.0%; Score 264; DB 6; Length 190;
 Best Local Similarity 100.0%; Pred. No. 1.9e-28;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 PCGPGSERRKHLFVDPOTCKSCKNTDSRCKAROLELNERC 45
 DB 141 PCGPGSERRKHLFVDPOTCKSCKNTDSRCKAROLELNERC 185

DB 141 PCGPGSERRKHLFVDPOTCKSCKNTDSRCKAROLELNERC 185

RESULT 4
 AC 09GL52 PRELIMINARY; PRT; 190 AA.
 DT 01-MAR-2001 (TREMBLrel. 16, Created)
 DT 01-MAR-2001 (TREMBLrel. 16, Last sequence update)
 DT 01-MAR-2001 (TREMBLrel. 16, Last annotation update)
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR.
 OS Sus scrofa (Pig).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
 OX NCBI_TaxID=9823;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Lee T., Ganty J.M.;
 RT "PCR cloning of porcine cardiac vascular endothelial growth factor
 gene."
 RT Submitted (NOV-2000) to the EMBL/Genbank/DBJ databases.
 DR EMBL: AF318502; AAG33064.1; -.
 SQ SEQUENCE 190 AA; 22338 MW; 10911FDC3C07417F CRC64;

Query Match 100.0%; Score 264; DB 6; Length 190;
 Best Local Similarity 100.0%; Pred. No. 1.9e-28;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PCGPGSERRKHLFVDPOTCKSCKNTDSRCKAROLELNERC 45
 DB 141 PCGPGSERRKHLFVDPOTCKSCKNTDSRCKAROLELNERC 185

RESULT 5
 AC 09GKR0 PRELIMINARY; PRT; 190 AA.
 DT 01-MAR-2001 (TREMBLrel. 16, Created)
 DT 01-MAR-2001 (TREMBLrel. 16, Last sequence update)
 DT 01-MAR-2001 (TREMBLrel. 16, Last annotation update)
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR 165.
 OS Equus caballus (Horse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
 OX NCBI_TaxID=9796;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Miura N., Misumi K., Kawahara K., Nakashima M., Fukumitsu S.,
 RA Kawabata H., Uto N., Oka T., Maruyama I., Sakamoto H.;
 RT "Cloning of cDNA and High-Level Expression of Equine Vascular
 Endothelial Growth Factor (VEGF)."
 RL Submitted (JAN-2001) to the EMBL/Genbank/DBJ databases.
 DR EMBL: AB053350; BAB20890.1; -.
 SQ SEQUENCE 190 AA; 22312 MW; 87E9E161439E5F87 CRC64;

Query Match 100.0%; Score 264; DB 6; Length 190;
 Best Local Similarity 100.0%; Pred. No. 1.9e-28;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PCGPGSERRKHLFVDPOTCKSCKNTDSRCKAROLELNERC 45
 DB 141 PCGPGSERRKHLFVDPOTCKSCKNTDSRCKAROLELNERC 185

RESULT 6
 AC 09XSF4 PRELIMINARY; PRT; 208 AA.
 DT 01-NOV-1999 (TREMBLrel. 12, Created)
 DT 01-NOV-1999 (TREMBLrel. 12, Last sequence update)
 DT 01-MAR-2001 (TREMBLrel. 16, Last annotation update)

DE VASCULAR ENDOTHELIAL GROWTH FACTOR 182.
GN VEGF.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
CC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=HEART;
RA Jiaojing L., Roque R.S.;
RL Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF133249; AAD29683.1; -.
DR HSSP; P15692; 2VPE.
DR InterPro; IPR000072; -.
DR Pfam; PF00341; PDGF_1; 1.
DR ProDom; PD001629; -; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS0278; PDGF_2; 1.
DR SMART; SM00141; PDGF; 1.
SQ SEQUENCE 208 AA; 24400 MW; CF77AC591F5C2BBE CRC64;
Query Match 100.0%; Score 264; DB 6; Length 208;
Best Local Similarity 100.0%; Pred. No. 2e-28;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 PCGPCSERKHLFVDDPOTCKSCCKNTDSRCKAROLEINERTCRC 45
Db 159 PCGPCSERKHLFVDDPOTCKSCCKNTDSRCKAROLEINERTCRC 203
RESULT 7
ID 060720 PRELIMINARY; PRT; 209 AA.
AC 060720;
DT 01-AUG-1998 (TREMBLrel. 07, Created)
DT 01-MAY-1999 (TREMBLrel. 10, Last sequence update)
DT 01-MAR-2001 (TREMBLrel. 16, Last annotation update)
DE VEGF183 PROTEIN PRECURSOR (VASCULAR ENDOTHELIAL GROWTH FACTOR 183)
DE (DJ261G23.6.6) (VASCULAR ENDOTHELIAL GROWTH FACTOR).
GN VEGF.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
CC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-KIDNEY;
RX MEDLINE=99096474; PubMed=9878851;
RT Lei J., Jiang A., Pei D.;
RT "Identification and characterization of a new splicing variant of
RT vascular endothelial growth factor: VEGF183.";
RL Blochum. Biophys. Acta, Gene Struct. Expr. 1443:400-406(1998).
RN [2]
RP SEQUENCE OF 114-209 FROM N.A.
RC TISSUE=RETINA;
RA Jiaojing L., Roque R.S.;
RL Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE FROM N.A.
RA Williams S.;
RL Submitted (DEC-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AJ010438; CAA09179.1; -.
DR EMBL; AF062645; AAC16730.1; -.
DR EMBL; AL136131; CAC19514.1; -.
DR HSSP; P15692; 2VPE.
DR InterPro; IPR000072; -.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; -; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
DR PROSITE; PS50278; PDGF_2; 1.
FT SIGNAL. 1 26 POTENTIAL.

FT CHAIN 27 209 VEGF183 PROTEIN.
SQ SEQUENCE 209 AA; 24422 MW; F01CCBACD945D6CA CRC64;
Query Match 100.0%; Score 264; DB 4; Length 209;
Best Local Similarity 100.0%; Pred. No. 2e-28;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 PCGPCSERKHLFVDDPOTCKSCCKNTDSRCKAROLEINERTCRC 45
Db 160 PCGPCSERKHLFVDDPOTCKSCCKNTDSRCKAROLEINERTCRC 204
RESULT 8
ID 09XSF5 PRELIMINARY; PRT; 214 AA.
AC 09XSF5;
DT 01-NOV-1999 (TREMBLrel. 12, Created)
DT 01-NOV-1999 (TREMBLrel. 12, Last sequence update)
DT 01-MAR-2001 (TREMBLrel. 16, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR 188.
GN VEGF.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
CC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=HEART;
RA Jiaojing L., Roque R.S.;
RL Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF133250; AAD29684.1; -.
DR HSSP; P15692; 2VPE.
DR InterPro; IPR000072; -.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; -; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
DR SMART; SM00141; PDGF; 1.
SQ SEQUENCE 214 AA; 25151 MW; 2269981AFBC60058 CRC64;
Query Match 100.0%; Score 264; DB 6; Length 214;
Best Local Similarity 100.0%; Pred. No. 2.1e-28;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 PCGPCSERKHLFVDDPOTCKSCCKNTDSRCKAROLEINERTCRC 45
Db 165 PCGPCSERKHLFVDDPOTCKSCCKNTDSRCKAROLEINERTCRC 209
RESULT 9
ID 09MYV3 PRELIMINARY; PRT; 214 AA.
AC 09MYV3;
DT 01-OCT-2000 (TREMBLrel. 15, Created)
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DT 01-MAR-2001 (TREMBLrel. 16, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR 188 PRECURSOR.
GN VEGF.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
CC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=20125516; PubMed=10661874;
RX Scheidegger P., Weiglhofer W., Suarez S., Kaser-Hotz B., Steiner R.,
RA Ballmer-Hofer K., Janssi R.;
RT "Vascular endothelial growth factor (VEGF) and its receptors in tumor-
bearing dogs.";
RL Biol. Chem. 380:1449-1454(1999).
DR EMBL; AJ133758; CAB82426.1; -.

[illegible]

DR	EMBL:	S85199;	AAC63101.1;	JOINED.
DR	EMBL:	S85201;	AAC63101.1;	JOINED.
DR	EMBL:	S85219;	AAC63101.1;	JOINED.
DR	EMBL:	S85222;	AAC63101.1;	JOINED.
DR	HSSP:	P15692;	2VPF.	
DR	InterPro:	IPR000072;	-	
DR	Pfam:	PF00341;	PDGF_1;	1.
DR	PROSITE:	PS00249;	PDGF_1;	1.
DR	PROSITE:	PS50278;	PDGF_2;	1.
DR	SMART:	SM00141;	PDGF_1;	
FT	NON_TER	1		
SO	SEQUENCE	254 AA;	29461 MW;	069DFE9B723DDBA8 CRC64;
Query Match				
Best Local Similarity		100.0%;	Score 264;	DB 4; Length 254;
Matches		45; Conservative	0; Mismatches	0; Indels
Oy	1	PCGPCSERKKHLFVODPOTCKSCKNTDSRCARQLELNERTCRC	45	
Db	205	PCGPCSERKKHLFVODPOTCKSCKNTDSRCARQLELNERTCRC	249	
RESULT 12				
ID	075875	PRELIMINARY;	PRT;	191 AA.
AC	075875;			
DT	01-NOV-1998	(TREMBLrel. 08, Created)		
DT	01-NOV-1998	(TREMBLrel. 08, last sequence update)		
DT	01-MAR-2001	(TREMBLrel. 16, last annotation update)		
DE	VASCULAR ENDOTHELIAL GROWTH FACTOR.			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;			
CC	Mammalia; Eutheria; Primates; Catarrhini; Hominoidea; Homo.			
OX	NCBI_TaxID=9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=BREAST;			
RA	MEDLINE=98119755; PubMed=9450968;			
RA	Claffey K.P., Shih S.-C., Mullen A., Dziennis S., Cusick J.L.,			
RT	Abrams K.R., Lee S.W., Detmar M.;			
RT	"Identification of a human VPE/VEGF 3' untranslated region mediating			
RL	hypoxia-induced mRNA stability.";			
DR	MOL. Biol. Cell 9:469-481(1998).			
DR	EMBL:	AF022375; AAC63143.1;	--	
DR	HSSP:	P15692; 1VFP.		
DR	InterPro:	IPR000072;	-	
DR	Pfam:	PF00341;	PDGF_1;	1.
DR	Prodrom:	PD001629;	-	1.
DR	PROSITE:	PS50278;	PDGF_2;	1.
DR	SMART:	SM00141;	PDGF_1;	
SO	SEQUENCE	191 AA;	22320 MW;	B5E435838C72715B CRC64;
Query Match				
Best Local Similarity		97.3%;	Score 257;	DB 4; Length 191;
Matches		44; Conservative	0; Mismatches	1; Indels
Oy	1	PCGPCSERKKHLFVODPOTCKSCKNTDSRCARQLELNERTCRC	45	
Db	142	PCGPCSERKKHLFVODPOTCKSCKNTDSRCARQLELNERTCRC	186	
RESULT 13				
ID	Q9N1S1	PRELIMINARY;	PRT;	123 AA.
AC	Q9N1S1;			
DT	01-OCT-2000	(TREMBLrel. 15, Created)		
DT	01-OCT-2000	(TREMBLrel. 15, last sequence update)		
DT	01-MAR-2001	(TREMBLrel. 16, last annotation update)		
DE	VASCULAR ENDOTHELIAL GROWTH FACTOR ISOFORM 165 (FRAGMENT).			
NN	VEGF.			
OS	Capreolus capreolus (Roe deer).			

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervoidae;
OC Cervidae; Odocoileinae; Capreolus.
OX NCBI_TaxID=9858;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=TESTIS;
RA Wadener A., Blotner S., Fickel J.;
RT "Detection of growth factors in the testes of roe deer (Capreolus
capreolus).";
RL Submitted (MAY-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF152594; AAF73233.1; -
DR InterPro; IPR000072; -
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; -; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
DR SMART; SM00141; PDGF; 1.
FT NON_TER 1
FT NON_TER 123
SQ SEQUENCE 123 AA; 14354 MW; 0A756F54105A4CE1 CRC64;

Query Match 96.6%; Score 255; DB 6; Length 123;
Best Local Similarity 100.0%; Pred. No. 2, 2e-27;
Matches 44; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CGPCSERRKHLFVODPOTCKSCCKNTDSRCKAROLEINERTCR 44
Db 80 CGPCSERRKHLFVODPOTCKSCCKNTDSRCKAROLEINERTCR 123
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RESULT 14
ID Q63672 PRELIMINARY; PRT; 102 AA.
AC Q63672; Q63882;
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1998 (TREMBLrel. 08, Last sequence update)
DT 01-OCT-2000 (TREMBLrel. 15, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF188) (FRAGMENT).
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CD; TISSUE=LUNG;
RA Kim I., Ryan A., Rohan R., Aguilar S., Amano S., Brown L.F.,
RA Miller J., Adams A.P.;
RL Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE OF 29-52 FROM N.A.
RC STRAIN=SPRAGUE-DAWLEY; TISSUE=BRAIN;
RA Yakovlev A.G., Faden A.I.;
RL Submitted (JUL-1993) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE OF 29-52 FROM N.A.
RC TISSUE=BRAIN;
RX MEDLINE=93343939; PubMed=8343163;
RA Ladoux A., Frelin C.;
RT "Expression of vascular endothelial growth factor by cultured
endothelial cells from brain microvessels.";
RL Biochem. Biophys. Res. Commun. 194:799-803(1993).
DR EMBL; AF062644; AAC16448.1; -
DR EMBL; L20913; AAA42334.1; -
DR EMBL; S64321; AAB27671.1; -
DR HSSP; P15692; 2VPE.
DR InterPro; IPR000072; -
DR Pfam; PF00341; PDGF; 1.
FT NON_TER 1
SQ SEQUENCE 102 AA; 12163 MW; CDFC6A6914D07D2B CRC64;

Query Match 94.3%; Score 249; DB 11; Length 102;
Best Local Similarity 97.7%; Pred. No. 1, 3e-26;
Matches 43; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 CGPCSERRKHLFVODPOTCKSCCKNTDSRCKAROLEINERTCR 45
Db 54 CGPCSERRKHLFVODPOTCKSCCKNTDSRCKAROLEINERTCR 97
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RESULT 15
ID Q9ERL6 PRELIMINARY; PRT; 142 AA.
AC Q9ERL6;
DT 01-MAR-2001 (TREMBLrel. 16, Created)
DT 01-MAR-2001 (TREMBLrel. 16, Last sequence update)
DT 01-MAR-2001 (TREMBLrel. 16, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR VEGF (FRAGMENT).
OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus.
OX NCBI_TaxID=10036;
RN [1]
RP SEQUENCE FROM N.A.
RA Ramesh G., Kondaliah P., Seshagiri P.B.;
RT "Regulation of expression of transforming growth factor-beta's by
steroid hormone in the hamster uterus.";
RL Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF297627; AAG16241.1; -
FT NON_TER 1
FT NON_TER 142
SQ SEQUENCE 142 AA; 16621 MW; F7DA16D924E4E99E CRC64;

Query Match 94.3%; Score 249; DB 11; Length 142;
Best Local Similarity 97.7%; Pred. No. 1, 6e-26;
Matches 43; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 CGPCSERRKHLFVODPOTCKSCCKNTDSRCKAROLEINERTCR 45
Db 98 CGPCSERRKHLFVODPOTCKSCCKNTDSRCKAROLEINERTCR 141
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Search completed: September 24, 2001, 16:15:53
Job time: 169 sec

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GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 24, 2001, 16:13:04 ; Search time 17.74 Seconds

(without alignments)
86.894 Million cell updates/sec

Title: US-09-579-420-1

Perfect score: 264
Sequence: 1 PCGPCSERKRLFYVDPQTC.....NTDSRCARQLEINERTCRC 45

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 93435 seqs, 34255486 residues

Total number of hits satisfying chosen parameters: 93435

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	264	100.0	190	1 VEGF_BOVIN	P15691 bos taurus
2	264	100.0	190	1 VEGF_PIG	P49151 sus scrofa
3	264	100.0	215	1 VEGF_HUMAN	P15692 homo sapien
4	261	98.9	164	1 VEGF_CAVPO	P26617 cavia porce
5	249	94.3	190	1 VEGF_RAT	P16612 rattus norv
6	249	94.3	214	1 VEGF_MOUSE	Q00731 mus musculu
7	237	89.8	216	1 VEGF_CHICK	P32582 gallus galli
8	115	43.6	188	1 VEGF_MOUSE	P49766 mus musculu
9	103	39.0	188	1 VEGF_HUMAN	P49766 mus musculu
10	79	29.9	419	1 VEGC_HUMAN	P49766 mus musculu
11	74	28.0	415	1 VEGC_MOUSE	P49766 mus musculu
12	68	25.8	1700	1 BAR3_CHITE	Q03376 chironomus
13	64.5	24.4	3707	1 FGBM_MOUSE	Q05793 mus musculu
14	64.5	24.4	4393	1 ANTA_HYDMA	P38160 homo sapien
15	59	22.3	220	1 PLMN_ERIEU	P38977 hydra magni
16	58.5	22.2	810	1 PLMN_ERIEU	Q29485 erinaceus e
17	58	22.0	83	1 TM10_ARATH	Q92433 arabidopsis
18	58	22.0	3084	1 LMAL_MOUSE	P19137 mus musculu
19	57.5	21.8	146	1 PA21_CAVPO	P34433 cavia porce
20	57.5	21.8	148	1 RNP_MICAV	Q04962 cavia porce
21	57.5	21.8	603	1 PA12_CAVPO	Q04962 cavia porce
22	56.5	21.4	477	1 NTFD_METMP	P1526 methanococc
23	56.5	21.4	934	1 CO6_HUMAN	P13671 homo sapien
24	56	21.2	428	1 B4AR_MEGA	P33141 meleagris g
25	56	21.2	655	1 HGF_HUMAN	Q04736 homo sapien
26	55.5	21.0	454	1 NOL1_RHIME	P25199 rhizobium m
27	55.5	21.0	3106	1 LMA2_MOUSE	Q06075 mus musculu
28	55	20.8	349	1 WC22_VARY	P34015 variola vir
29	54	20.5	73	1 MT_DREPO	Q94550 dreissena p
30	54	20.5	74	1 MT1_CAEBL	P17511 caenorhabdi
31	54	20.5	252	1 TG28_XENLA	P18718 xenopus lae
32	53.5	20.3	62	1 MT2_CAEBL	P17512 caenorhabdi
33	53.5	20.3	483	1 NTFD_KLEPN	P00466 klebsiella

34	53.5	20.3	746	1 E2H2_HUMAN	Q15910 homo sapien
35	53.5	20.3	746	1 E2H2_MOUSE	Q61188 mus musculu
36	53.5	20.3	1639	1 LMGI_DROME	P15215 drosophila
37	53.5	20.3	1786	1 LMGI_MOUSE	P02469 mus musculu
38	53	20.1	62	1 MT_XENLA	Q05890 xenopus lae
39	53	20.1	63	1 MT_CHICK	P09576 gallus galli
40	53	20.1	66	1 MT3_RAT	P37361 rattus norv
41	53	20.1	68	1 MT3_MOUSE	P28184 mus musculu
42	53	20.1	118	1 PA2B_MICNI	P8166 micrurus ni
43	53	20.1	118	1 PA2B_MICNI	P8167 micrurus ni
44	53	20.1	2377	1 CCAG_HUMAN	Q43497 homo sapien
45	53	20.1	3635	1 LMA5_MOUSE	Q61001 mus musculu

ALIGNMENTS

```

RESULT 1
VEGF_BOVIN STANDARD; PRT; 190 AA.
AC P15691:
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 01-OCT-1996 (Rel. 34, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE PERMEABILITY FACTOR) (VPF).
GN VEGF.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
[1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 27-47.
RX MEDLINE=90069608; PubMed=2479986;
RA Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
RT "Vascular endothelial growth factor is a secreted angiogenic
RT mitogen."
RL Science 246:1306-1309(1989).
[2]
RN SEQUENCE OF 27-190 FROM N.A.
RX MEDLINE=90121225; PubMed=2610687;
RA Fischer E., Gospodarowicz D., Mitchell R., Silva M., Schilling J.,
RA Lau K., Crisp T., Fiddes J.C., Abraham J.A.;
RT "Vascular endothelial growth factor: a new member of the platelet-
RT derived growth factor gene family."
RL Biochem. Biophys. Res. Commun. 165:1198-1206(1989).
[3]
RP SEQUENCE OF 27-31.
RX MEDLINE=89286596; PubMed=2739925;
RA Ferrara N., Henzel W.J.;
RT "Placental follicular cells secrete a novel heparin-binding growth
RT factor specific for vascular endothelial cells."
RL Biochem. Biophys. Res. Commun. 161:851-858(1989).
-1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
PERMEABILITY.
-1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
-1- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
SIMILARITY).
-1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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DR EMBL; M32976; AAA30502.1; -.
DR EMBL; M31836; AAA30804.1; -.

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DR EMBL: M33750; AAA30805.1; -
 DR PIR: A33255; A33255.
 DR PIR: A33787; A33787.
 DR PIR: B40080; B40080.
 DR HSP: P15692; 2VGH.
 DR InterPro: IPR000072; -
 DR Pfam: PF00341; PDGF_1.
 DR PROSITE: PS00249; PDGF_1; 1.
 DR PROSITE: PS50278; PDGF_2; 1.
 DR Mitogen: Growth factor; Glycoprotein; Alternative splicing; Signal.
 FT SIGNAL 1 26
 FT CHAIN 27 190
 FT DISULFID 51 93
 FT DISULFID 82 127
 FT DISULFID 86 129
 FT DISULFID 76 76
 FT DISULFID 85 85
 FT CARBOHYD 100 100
 FT VARSPLIC 139 183
 FT VARSPLIC 184 184
 SQ SEQUENCE 190 AA; 22310 MW; EDBF903E46E24789 CRC64;

Query Match 100.0%; Score 264; DB 1; Length 190;
 Best Local Similarity 100.0%; Pred. No. 1.8e-24;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PCGPCSERKHLFVDPOTCKSCSKNTDSRCKAROLELNERTC RC 45
 DB 141 PCGPCSERKHLFVDPOTCKSCSKNTDSRCKAROLELNERTC RC 185

RESULT 2
 VEGF_PIG STANDARD; PRT; 190 AA.
 ID VEGF_PIG
 AC P49151;
 DT 01-FEB-1996 (Rel. 33, Created)
 DT 01-FEB-1996 (Rel. 33, Last sequence update)
 DT 01-OCT-1996 (Rel. 34, Last annotation update)
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR DE PERMEABILITY FACTOR) (VPF).
 GN VEGF.
 OS Sus scrofa (Pig).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
 OX NCBI_Taxid:9823;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE-Heart;
 RX MEDLINE-95143284; PubMed-7841203;
 RA Shatma H.S., Tang Z.H., Gho B.C.H., Verdouw P.D.;
 RT "Nucleotide sequence and expression of the porcine vascular endothelial growth factor."
 RL Biochim. Biophys. Acta 1260:235-238(1995).
 CC -1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR PERMEABILITY (BY SIMILARITY).
 CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED (BY SIMILARITY).
 CC -1- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY SIMILARITY).
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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 CC EMBL: X81380; CAA57143.1; -
 CC HSP: P15692; 2VGH.

DR InterPro: IPR000072; -
 DR Pfam: PF00341; PDGF_1.
 DR PROSITE: PS00249; PDGF_1; 1.
 DR PROSITE: PS50278; PDGF_2; 1.
 DR Mitogen: Growth factor; Glycoprotein; Signal.
 FT SIGNAL 1 26
 FT CHAIN 27 190
 FT DISULFID 51 93
 FT DISULFID 82 127
 FT DISULFID 86 129
 FT DISULFID 76 76
 FT DISULFID 85 85
 FT CARBOHYD 100 100
 SQ SEQUENCE 190 AA; 22368 MW; 04D408BD7913047F CRC64;

Query Match 100.0%; Score 264; DB 1; Length 190;
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OY 1 PCGPCSERKHLFVDPOTCKSCSKNTDSRCKAROLELNERTC RC 45
 DB 141 PCGPCSERKHLFVDPOTCKSCSKNTDSRCKAROLELNERTC RC 185

RESULT 3
 VEGF_HUMAN STANDARD; PRT; 215 AA.
 ID VEGF_HUMAN
 AC P15692;
 DT 01-APR-1990 (Rel. 14, Created)
 DT 01-APR-1990 (Rel. 14, Last sequence update)
 DT 15-JUL-1999 (Rel. 38, Last annotation update)
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR DE PERMEABILITY FACTOR) (VPF).
 GN VEGF OR VEGFA.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
 OX NCBI_Taxid:9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE-90069608; PubMed-2479986;
 RA Leung D.W., Cachianes G., Kiang W.-J., Goeddel D.V., Ferrara N.;
 RT "Vascular endothelial growth factor is a secreted angiogenic mitogen."
 RL Science 246:1306-1309(1989).
 CC -1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR PERMEABILITY (BY SIMILARITY).
 CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED (BY SIMILARITY).
 CC -1- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY SIMILARITY).
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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 CC EMBL: X81380; CAA57143.1; -
 CC HSP: P15692; 2VGH.

RA Siegel N., Haymore B.L., Lettingruber R., Feder J.;
 RT "Human vascular permeability factor. Isolation from U937 cells.";
 RL J. Biol. Chem. 264:20017-20024(1989).
 RN [6]
 RP SEQUENCE OF 27-41.
 RX MEDLINE=93145946; PubMed=7678805;
 RA Flebich B.L., Jaeger B., Schoellmann C., Weindel K., Witting J.,
 Koops G., Marne D., Hug H., Welch H.A.;
 RT "Synthesis and assembly of functionally active human vascular
 endothelial growth factor homodimers in insect cells.";
 RL Eur. J. Biochem. 211:19-26(1993).
 RN [7]
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS) OF 34-135.
 RX MEDLINE=97352774; PubMed=9207067;
 RA Muller Y.A., Li B., Christinger H.W., Wells J.A., Cunningham B.C.,
 de Vos A.M.;
 RT "Vascular endothelial growth factor: crystal structure and functional
 mapping of the kinase domain receptor site.";
 RL Proc. Natl. Acad. Sci. U.S.A. 94:7192-7197(1997).
 RN [8]
 RP X-RAY CRYSTALLOGRAPHY (1.93 ANGSTROMS) OF 34-135.
 RX MEDLINE=98035455; PubMed=9351807;
 RA Muller Y.A., Christinger H.W., Keyt B.A., de Vos A.M.;
 RT "The crystal structure of vascular endothelial growth factor (VEGF)
 refined to 1.93-A resolution: multiple copy flexibility and receptor
 binding.";
 RL Structure 5:1325-1338(1997).
 RN [9]
 RP X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 39-134.
 RX MEDLINE=99119204; PubMed=9922142;
 RA Meisner C., Christinger H.W., Cochran A.G., Cunningham B.C.,
 Fairbrother W.J., Keenan C.J., Meng G., de Vos A.M.;
 RT "Crystal structure of the complex between VEGF and a receptor-blocking
 peptide.";
 RL Biochemistry 37:17765-17772(1998).
 RN [10]
 RP STRUCTURE BY NMR OF 34-135.
 RX MEDLINE=97477915; PubMed=9336848;
 RA Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
 Starovasnik M.A.;
 RT "1H, 13C, and 15N backbone assignment and secondary structure of the
 receptor-binding domain of vascular endothelial growth factor.";
 RL Protein Sci. 6:2250-2260(1997).
 RN [11]
 RP STRUCTURE BY NMR OF 137-215.
 RX MEDLINE=98298440; PubMed=9634701;
 RA Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
 Starovasnik M.A.;
 RT "Solution structure of the heparin-binding domain of vascular
 endothelial growth factor.";
 RL Structure 6:637-648(1998).
 CC -1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
 CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
 PERMEABILITY.
 CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
 CC -1- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
 TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
 SIMILARITY)
 CC -1- ALTERNATIVE PRODUCTS: FOUR FORMS OF VEGF ARE PRODUCED BY
 ALTERNATIVE SPLICING OF THE SAME GENE (VEGF-121, VEGF-165,
 VEGF-189 AND VEGF-215).
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC -----
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 or send an email to license@isb-sib.ch).
 CC -----
 CC EMBL; M32977; AAA35789.1; -
 CC EMBL; M27281; AAA36807.1; -
 CC DR

DR EMBL; M63978; AAA36804.1; -
 DR EMBL; M63971; AAA36804.1; JOINED.
 DR EMBL; M63972; AAA36804.1; JOINED.
 DR EMBL; M63973; AAA36804.1; JOINED.
 DR EMBL; M63974; AAA36804.1; JOINED.
 DR EMBL; M63975; AAA36804.1; JOINED.
 DR EMBL; M63976; AAA36804.1; JOINED.
 DR EMBL; M63977; AAA36804.1; JOINED.
 DR EMBL; X62568; CAA44447.1; -
 DR PIR; A34492; A34492.
 DR PIR; A40079; A40079.
 DR PIR; A40080; A40080.
 DR PIR; A40454; A40454.
 DR PIR; B40454; B40454.
 DR PIR; C40454; C40454.
 DR PIR; J01463; J01463.
 DR PIR; J01464; J01464.
 DR PIR; S17348; S17348.
 DR PDB; 1VGH; 08-APR-98.
 DR PDB; 2VGH; 08-APR-98.
 DR PDB; 1VPE; 08-APR-98.
 DR PDB; 2VPE; 29-JUL-98.
 DR PDB; 1VPP; 23-FEB-99.
 DR MIM; 192240; -
 DR InterPro; IPR000072; -
 DR Pfam; PF00341; PDGF_1.
 DR PROSITE; PS00249; PDGF_1.
 DR PROSITE; PS0278; PDGF-2; 1.
 DR MitoGen; Growth factor; Glycoprotein; Alternative splicing; Signal;
 DR 3D-structure.
 DR SIGNAL 1 26
 FT CHAIN 27 215 VASCULAR ENDOTHELIAL GROWTH FACTOR.
 FT DISULFID 52 94
 FT DISULFID 83 128
 FT DISULFID 87 130
 FT DISULFID 77 77 INTERCHAIN.
 FT DISULFID 86 86 INTERCHAIN.
 FT CARBOHYD 101 101 N-LINKED (GLCNAC. . .).
 FT VARPPLIC 141 141 K -> N (IN ISOFORM VEGF-121 AND ISOFORM
 VEGF-165).
 FT VARPPLIC 142 165 MISSING (IN ISOFORM VEGF-165).
 FT VARPPLIC 142 209 MISSING (IN ISOFORM VEGF-121).
 FT VARPPLIC 142 209 MISSING (IN ISOFORM VEGF-121).
 SQ SEQUENCE 215 AA; 25173 MW; 7B9759AD5871FF33 CRC64;
 Query Match 100.0%; Score 264; DB 1; Length 215;
 Best Local Similarity 100.0%; Pred. No. 2e-24;
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 PCGPCSERKHLFVODPOTCKSCCKNDKRCARQLEINERTC 45
 DB 166 PCGPCSERKHLFVODPOTCKSCCKNDKRCARQLEINERTC 210
 RESULT 4
 VEGF_CAVPO STANDARD; PRT; 164 AA.
 ID VEGF_CAVPO
 AC P26617;
 DT 01-AUG-1992 (Rel. 23, Created)
 DT 01-AUG-1992 (Rel. 23, Last sequence update)
 DT 01-OCT-1996 (Rel. 34, Last annotation update)
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) (VASCULAR PERMEABILITY
 FACTOR) (VFP).
 GN VEGF.
 OS Cavia porcellus (Guinea pig).
 OC Eukaryota; Metazoa; Chordata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Hystriognathi; Caviidae; Cavia.
 OX NCBI_TaxId=10141;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Berse B.;
 RL Submitted (XXX-1992) to the EMBL/GenBank/DBJ databases.
 CC -1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL

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CC CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC PERMEABILITY.
CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
CC -1- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC SIMILARITY).
CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC -----
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CC -----
CC EMBL: M84230; AAA37057.1; -
CC HSP: P15692; 2VGH.
CC InterPro: IPR000072; -.
CC Pfam: PF00341; PDGF_1; 1.
CC PROSITE: PS00249; PDGF_1; 1.
CC PROSITE: PS50278; PDGF_2; 1.
CC MitoGen: Growth factor; Glycoprotein.
CC FT DISULFID 25 67 BY SIMILARITY.
CC FT DISULFID 56 101 BY SIMILARITY.
CC FT DISULFID 60 103 BY SIMILARITY.
CC FT DISULFID 50 50 INTERCHAIN (BY SIMILARITY).
CC FT DISULFID 59 59 INTERCHAIN (BY SIMILARITY).
CC FT CARBOHYD 74 74 N-LINKED (GLCNAC... ) (POTENTIAL).
CC SEQUENCE 164 AA; 19330 MW; 9EB86A81A9D5DCA4 CRC64;

Query Match
Best Local Similarity 98.9%; Score 261; DB 1; Length 164;
Matches 44; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 PCGPCSERRKHLEFVQDPQTCCKSCNTDSRCARQLELNERTC 45
DB 115 PCGPCSERRKHLEFVQDPQTCCKSCNTDSRCARQLELNERTC 159

RESULT 5
VEGF_RAT STANDARD; PRT; 190 AA.
AC P16612;
DT 01-AUG-1990 (Rel. 15, Created)
DT 01-AUG-1990 (Rel. 15, Last sequence update)
DT 01-OCT-1996 (Rel. 34, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE PERMEABILITY FACTOR) (VPF).
GN VEGF.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 27-190.
RX MEDLINE=90207249; PubMed=2320579;
RA Conn G., Bayne M.L., Soderman D.D., Kwok P.W., Sullivan K.A.,
RA Palasi T.M., Hope D.A., Thomas K.A.;
RT "Amino acid and cDNA sequences of a vascular endothelial cell mitogen
RT that is homologous to platelet-derived growth factor.";
RL Proc. Natl. Acad. Sci. U.S.A. 87:2628-2633(1990).
CC -1- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC PERMEABILITY.
CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
CC -1- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC SIMILARITY).
CC -1- TISSUE SPECIFICITY: EXPRESSED IN THE PITUITARY, IN BRAIN, IN
CC PARTICULARLY IN SUPRAOPTIC AND PARAVENTRICULAR NUCLEI AND THE
CC CHOROID PLEXUS. ALSO FOUND ABUNDANTLY IN THE CORPUS LUTEUM OF
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CC THE OVARY AND IN KIDNEY GLOMERULI.
CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC -----
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CC -----
CC EMBL: M32167; AAA41211.1; -
CC PIR: A35987; A35987.
CC HSP: P15692; 2VGH.
CC InterPro: IPR000072; -.
CC Pfam: PR00341; PDGF_1; 1.
CC PROSITE: PS00249; PDGF_1; 1.
CC PROSITE: PS50278; PDGF_2; 1.
CC MitoGen: Growth factor; Glycoprotein; Signal.
CC FT CHAIN 1 26 VASCULAR ENDOTHELIAL GROWTH FACTOR.
CC FT DISULFID 27 190 BY SIMILARITY.
CC FT DISULFID 51 93 BY SIMILARITY.
CC FT DISULFID 82 127 BY SIMILARITY.
CC FT DISULFID 86 129 BY SIMILARITY.
CC FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
CC FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
CC FT CARBOHYD 100 100 N-LINKED (GLCNAC... ).
CC SEQUENCE 190 AA; 22396 MW; 58937401041E377 CRC64;

Query Match
Best Local Similarity 94.3%; Score 249; DB 1; Length 190;
Matches 43; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 CGPCSERRKHLEFVQDPQTCCKSCNTDSRCARQLELNERTC 45
DB 142 CGPCSERRKHLEFVQDPQTCCKSCNTDSRCARQLELNERTC 185

RESULT 6
VEGF_MOUSE STANDARD; PRT; 214 AA.
AC Q00731;
DT 01-APR-1993 (Rel. 25, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 01-OCT-2000 (Rel. 40, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE PERMEABILITY FACTOR) (VPF).
GN VEGF.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A. PubMed=1592003;
RX MEDLINE=92274860; PubMed=1592003;
RA Breier G., Albrecht U., Sterrer S., Risau W.;
RT "Expression of vascular endothelial growth factor during embryonic
RT angiogenesis and endothelial cell differentiation.";
RL Development 114:521-532(1992).
RN [2]
RP SEQUENCE FROM N.A. (VEGF-1).
RX MEDLINE=92355593; PubMed=1644816;
RA Claffey K.P., Wilkison W.O., Sliemers B.M.;
RT "Vascular endothelial growth factor. Regulation by cell
RT differentiation and activated second messenger pathways.";
RL J. Biol. Chem. 267:16317-16322(1992).
RN [3]
RP SEQUENCE OF 1-3 FROM N.A.
RX MEDLINE=96216498; PubMed=8632007;
RA Shima D.T., Kuroki M., Deutsch U., Ng Y., Adams A.P., D'Amore P.A.;
RT "The mouse gene for vascular endothelial growth factor. Genomic
RT structure, definition of the transcriptional unit, and
```


FT VARSPLIC 166 166 F -> L (IN ISOFORM VEGF-146).
 SQ VARSPLIC 167 210 MISSING (IN ISOFORM VEGF-146).
 FT SEQUENCE 216 AA: 25203 MW: 82669C2FE6C6DA7 CRC64:

Query Match 89.8%; Score 237; DB 1; Length 216;
 Best Local Similarity 93.2%; Pred. No. 3e-21;

Matches 41; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Oy 2 CGPCSRRHFLFYODPOTCKSCCKNTD-SRCKARQLELNERCRC 45
 Db 168 CERCSESRHFLFYODPOTCKSCCKNTD-SRCKARQLELNERCRC 211

RESULT 8
 VEGF_MOUSE STANDARD; PRT: 188 AA.
 ID VEGF_MOUSE
 AC P49766;
 DT 01-OCT-1996 (rel. 34, Created)
 DT 01-OCT-1996 (rel. 34, Last sequence update)
 DT 15-DEC-1998 (rel. 37, Last annotation update)
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR B PRECURSOR (VEGF-B) (VASCULAR
 DE ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRF).
 GN VEGFB OR VRF.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN (1)
 RP SEQUENCE FROM N.A.
 RC TISSUE=Heart;
 RX MEDLINE=96197355; PubMed=8637916;
 RA Olofsson B., Pajusola K., Kaipainen A., von Euler G., Jonkov V.,
 RA Saksela O., Orpana A., Petersson R.F., Allitalo K., Eriksson U.,
 RT "Vascular endothelial growth factor B, a novel growth factor for
 RT endothelial cells."
 RT Proc. Natl. Acad. Sci. U.S.A. 93:2576-2581(1996).
 RN (2)
 RP SEQUENCE FROM N.A.
 RX MEDLINE=96183052; PubMed=8607868;
 RA Townsend S., Lagercrantz J., Grimond S., Sillins G.,
 RA Nordenskjöld M., Weber G., Hayward N.K.,
 RT "Characterization of the murine VEGF-related factor gene."
 RT Biochem. Biophys. Res. Commun. 220:922-928(1996).
 RL -1- FUNCTION: GROWTH FACTOR FOR ENDOTHELIAL CELLS. BINDS HEPARIN.
 CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED. CAN ALSO FORM HETERODIMER
 CC WITH VEGF.
 CC -1- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
 CC TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN.
 CC -1- TISSUE SPECIFICITY: ABUNDANTLY EXPRESSED IN HEART, BRAIN, KIDNEY
 CC AND SKELETAL MUSCLE.
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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 CC -----
 DR EMBL: U48800; AAB06273.1; -
 DR EMBL: U43837; AAC52553.1; -
 DR HSSP: P15692; 2VGH.
 DR MGI: 106199; Vegfb.
 DR InterPro: IPR000072; -
 DR Pfam: PF00341; PDGF_1;
 DR PROSITE: PS00249; PDGF_1; 1.
 DR PROSITE: PS50278; PDGF_2; 1.
 KM Mitogen; Growth factor; Signal; Heparin-binding.
 FT SIGNAL 1 21
 FT CHAIN 22 188
 FT SEQUENCE 22 188 VASCULAR ENDOTHELIAL GROWTH FACTOR B.

SQ SEQUENCE 188 AA: 21442 MW: D52A055FB995E9CA CRC64:

Query Match 43.6%; Score 115; DB 1; Length 188;
 Best Local Similarity 46.7%; Pred No. 5.8e-07;

Matches 21; Conservative 7; Mismatches 13; Indels 4; Gaps 2;

Oy 2 CGPCSRRHFLFYODPOTCKSCCKNTD-SRCKARQLELNERCRC 45
 Db 142 CPTCTGRQR---PDPTRCRRCRRRRFLHCGRGELNPDTCTRC 183

RESULT 9
 VEGF_HUMAN STANDARD; PRT: 188 AA.
 ID VEGF_HUMAN
 AC P49765;
 DT 01-OCT-1996 (rel. 34, Created)
 DT 01-OCT-1996 (rel. 34, Last sequence update)
 DT 01-OCT-2000 (rel. 40, Last annotation update)
 DE VASCULAR ENDOTHELIAL GROWTH FACTOR B PRECURSOR (VEGF-B) (VEGF RELATED
 DE FACTOR).
 GN VEGFB OR VRF.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
 OX NCBI_TaxID=9606;
 RN (1)
 RP SEQUENCE FROM N.A.
 RX MEDLINE=96197355; PubMed=8637916;
 RA Olofsson B., Pajusola K., Kaipainen A., von Euler G., Jonkov V.,
 RA Saksela O., Orpana A., Petersson R.F., Allitalo K., Eriksson U.,
 RT "Vascular endothelial growth factor B, a novel growth factor for
 RT endothelial cells."
 RT Proc. Natl. Acad. Sci. U.S.A. 93:2576-2581(1996).
 RN (2)
 RP SEQUENCE FROM N.A.
 RX MEDLINE=97077124; PubMed=8919691;
 RA Grimond S., Lagercrantz J., Drinkwater C., Sillins G., Townsend S.,
 RA Pollock P., Gotley D., Carson E., Rakar S., Nordenskjöld M., Ward L.,
 RA Hayward N., Weber G.,
 RT "Cloning and characterization of a novel human gene related to
 RT vascular endothelial growth factor."
 RT Genome Res. 6:124-131(1996).
 RL -1- FUNCTION: GROWTH FACTOR FOR ENDOTHELIAL CELLS. BINDS HEPARIN.
 CC -1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED. CAN ALSO FORM HETERODIMER
 CC WITH VEGF.
 CC -1- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
 CC TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN.
 CC -1- TISSUE SPECIFICITY: EXPRESSED IN ALL TISSUES EXCEPT LIVER.
 CC HIGHEST LEVELS FOUND IN HEART, SKELETAL MUSCLE AND PANCREAS.
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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 CC -----
 DR EMBL: U48801; AAB06274.1; -
 DR EMBL: U43369; AAB91463.1; -
 DR HSSP: P15692; 1VPF.
 DR MIM: 601398; -
 DR InterPro: IPR000072; -
 DR Pfam: PF00341; PDGF_1;
 DR PROSITE: PS00249; PDGF_1; 1.
 DR PROSITE: PS50278; PDGF_2; 1.
 KM Mitogen; Growth factor; Signal; Heparin-binding.
 FT SIGNAL 1 21
 FT CHAIN 22 188
 FT SEQUENCE 188 AA: 21261 MW: F04654D5A372194 CRC64;

CC	-1- SIMILARITY: CONTAINS 2 EGF-LIKE DOMAINS.
CC	-----
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DR	EMBL; M71774; AAA39911.1; -;
DR	EMBL; J04054; AAA39899.1; -;
DR	HSSP; P01130; IAUJ.
DK	MGD; MG1_96257; Hsp92.
DR	InterPro; IPRO00034; -;
DR	InterPro; IPRO00082; -;
DR	InterPro; IPRO000561; -;
DR	InterPro; IPRO01438; -;
DR	InterPro; IPRO01791; -;
DR	InterPro; IPRO02049; -;
DR	InterPro; IPRO02172; -;
DR	InterPro; IPRO03006; -;
DR	pfam; PF01390; SEA; 1.
DR	pfam; PF00047; Ig; 15.
DR	pfam; PF00052; laminin_B; 3.
DR	pfam; PF00053; laminin_Egf; 8.
DR	pfam; PF00054; laminin_G; 3.
DR	Pfam; PF00057; Idl_recept_a; 4.
DR	PRINTS; PR00010; EGFRLOOD
DR	PROSITE; PS00022; EGF_1; 8.
DR	PROSITE; PS01186; EGF_2; 5.
DR	PROSITE; PS01209; LDLRA_1; 4.
DR	PROSITE; PS01248; LAMININ_TYPE_EGF; 11.
DR	PROSITE; PS50068; LDLRA_2; 4.
KW	Signal; Basement membrane; Proteoglycan; Repeat; Glycoprotein;
KW	Heparan sulfate; Lamln Bgf-like domain; Immunoglobulin domain;
KW	Extracellular matrix; EGF-like domain.
FY	SIGNAL 1 21 POTENTIAL.
FY	CHAIN 22 3707 BASEMENT MEMBRANE-SPECIFIC HEPARAN SULFATE PROTEOGLYCAN CORE PROTEIN.
FT	DOMAIN 22 193 DOMAIN I (UNIQUE, CONTAINS 3 HS SIDE CHAINS).
FT	DOMAIN 194 403 DOMAIN II (4 LDLRA REPEATS).
FT	DOMAIN 404 504 DOMAIN IIA (1 IGG-REPEAT).
FT	DOMAIN 507 1676 DOMAIN III (SIMILAR TO SHORT ARM OF LAMININ A CHAIN).
FT	DOMAIN 1677 2980 DOMAIN IV (SIMILAR TO NEURAL CELL ADHESION MOLECULE; 14 IGG REPEATS).
FT	DOMAIN 2981 3707 DOMAIN V (C-TERMINAL G-DOMAIN OF LAMININ ALPHA CHAINS AND EGF).
FT	DOMAIN 194 234 LDL-RECEPTOR CLASS A 1.
FT	DOMAIN 281 319 LDL-RECEPTOR CLASS A 2.
FT	DOMAIN 320 359 LDL-RECEPTOR CLASS A 3.
FT	DOMAIN 360 403 LDL-RECEPTOR CLASS A 4.
FT	DOMAIN 404 504 IG-LIKE C2-TYPE DOMAIN 1.
FT	DOMAIN 521 530 LAMININ EGF-LIKE 1 (N-TERMINAL).
FT	DOMAIN 531 730 LAMININ EGF-LIKE 1 (N-TERMINAL).
FT	DOMAIN 731 763 LAMININ EGF-LIKE 1 (C-TERMINAL).
FT	DOMAIN 764 813 LAMININ EGF-LIKE 2.
FT	DOMAIN 814 871 LAMININ EGF-LIKE 3.
FT	DOMAIN 879 923 LAMININ EGF-LIKE 4 (INCOMPLETE).
FT	DOMAIN 924 933 LAMININ EGF-LIKE 5 (N-TERMINAL).
FT	DOMAIN 934 1125 LAMININ EGF-LIKE 5 (C-TERMINAL).
FT	DOMAIN 1126 1158 LAMININ EGF-LIKE 5 (C-TERMINAL).
FT	DOMAIN 1159 1208 LAMININ EGF-LIKE 6.
FT	DOMAIN 1209 1265 LAMININ EGF-LIKE 7.
FT	DOMAIN 1275 1324 LAMININ EGF-LIKE 8.
FT	DOMAIN 1325 1334 LAMININ EGF-LIKE 9 (N-TERMINAL).
FT	DOMAIN 1335 1529 LAMININ EGF-LIKE 9 (C-TERMINAL).
FT	DOMAIN 1530 1562 LAMININ EGF-LIKE 9 (C-TERMINAL).
FT	DOMAIN 1563 1612 LAMININ EGF-LIKE 10.
FT	DOMAIN 1613 1670 LAMININ EGF-LIKE 11.

FT	DOMAIN	1677	1771	IG-LIKE C2-TYPE DOMAIN 2.
FT	DOMAIN	1772	1865	IG-LIKE C2-TYPE DOMAIN 3.
FT	DOMAIN	1866	1954	IG-LIKE C2-TYPE DOMAIN 4.
FT	DOMAIN	1955	2049	IG-LIKE C2-TYPE DOMAIN 5.
FT	DOMAIN	2050	2148	IG-LIKE C2-TYPE DOMAIN 6.
FT	DOMAIN	2149	2244	IG-LIKE C2-TYPE DOMAIN 7.
FT	DOMAIN	2245	2343	IG-LIKE C2-TYPE DOMAIN 8.
FT	DOMAIN	2344	2436	IG-LIKE C2-TYPE DOMAIN 9.
FT	DOMAIN	2437	2532	IG-LIKE C2-TYPE DOMAIN 10.
FT	DOMAIN	2533	2619	IG-LIKE C2-TYPE DOMAIN 11.
FT	DOMAIN	2620	2720	IG-LIKE C2-TYPE DOMAIN 12.
FT	DOMAIN	2721	2809	IG-LIKE C2-TYPE DOMAIN 13.
FT	DOMAIN	2810	2895	IG-LIKE C2-TYPE DOMAIN 14.
FT	DOMAIN	2896	2980	IG-LIKE C2-TYPE DOMAIN 15.
FT	DOMAIN	2981	3130	LAMININ G-LIKE 1 (GLOBULAR DOMAIN V A)
FT	DOMAIN	3049	3241	EGF-LIKE 1.
FT	DOMAIN	3304	3495	EGF-LIKE 2.
FT	DOMAIN	3558	3705	LAMININ G-LIKE 2 (GLOBULAR DOMAIN V B)
FT	DOMAIN	65	67	HEPARAN SULFATE (POTENTIAL).
FT	DOMAIN	67	67	HEPARAN SULFATE (POTENTIAL).
FT	DOMAIN	71	73	HEPARAN SULFATE (POTENTIAL).
FT	DOMAIN	76	78	HEPARAN SULFATE (POTENTIAL).
FT	DOMAIN	3615	3617	MEDIANES MOTOR NEURON ATTACHMENT (POTENTIAL).
FT	DISULFID	199	212	BY SIMILARITY.
FT	DISULFID	206	225	BY SIMILARITY.
FT	DISULFID	219	234	BY SIMILARITY.
FT	DISULFID	285	297	BY SIMILARITY.
FT	DISULFID	292	310	BY SIMILARITY.
FT	DISULFID	304	319	BY SIMILARITY.
FT	DISULFID	325	337	BY SIMILARITY.
FT	DISULFID	332	350	BY SIMILARITY.
FT	DISULFID	344	359	BY SIMILARITY.
FT	DISULFID	368	381	BY SIMILARITY.
FT	DISULFID	375	394	BY SIMILARITY.
FT	DISULFID	388	403	BY SIMILARITY.
FT	DISULFID	428	479	BY SIMILARITY.
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FT	DISULFID	1792	1839	BY SIMILARITY.
FT	DISULFID	1886	1932	BY SIMILARITY.
FT	DISULFID	1976	2021	BY SIMILARITY.
FT	DISULFID	2073	2118	BY SIMILARITY.
FT	DISULFID	2170	2215	BY SIMILARITY.
FT	DISULFID	2268	2313	BY SIMILARITY.
FT	DISULFID	2365	2413	BY SIMILARITY.
FT	DISULFID	2456	2506	BY SIMILARITY.
FT	DISULFID	2554	2599	BY SIMILARITY.

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FT DISULFID 2641 2686 BY SIMILARITY.
FT DISULFID 2831 2876 BY SIMILARITY.
FT DISULFID 2917 2962 BY SIMILARITY.
FT CARBOHYD 65 65 O-LINKED (GLYCOSAMINOGLYCAN) (POTENTIAL).
FT CARBOHYD 71 71 O-LINKED (GLYCOSAMINOGLYCAN) (POTENTIAL).
FT CARBOHYD 76 76 O-LINKED (GLYCOSAMINOGLYCAN) (POTENTIAL).

Query Match 24.48; Score 64.5; DB 1; Length 3707;
Best Local Similarity 36.48; Pred. No. 6.4;
Matches 12; Conservative 4; Mismatches 16; Indels 1; Gaps 1;

OY 2 CGPGRSRKHLFVQDPQTC-KCSCKNTDSRCKA 33
DB 903 CNECSGSRHLKQNDGCLKCFKMGVSRCSS 935

RESULT 14
PCBM_HUMAN STANDARD; PRT; 4393 AA.
AC P98160; Q16287;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 01-OCT-2000 (Rel. 40, Last annotation update)
DE BASEMENT MEMBRANE-SPECIFIC HEPARAN SULFATE PROTEOGLYCAN CORE
DE PROTEIN PRECURSOR (HSPG) (PERLECAN) (PLC).
OS HSPG2.
GN Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homidae; Homo.
OX NCBI_TaxID=9606;

RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-92112994; PubMed-1730768;
RA Kallunki P., Tryggvason K.;
RT "Human basement membrane heparan sulfate proteoglycan core protein: a
RT 467-kD protein containing multiple domains resembling elements of the
RT low density lipoprotein receptor, laminin, neural cell adhesion
RT molecules, and epidermal growth factor."
RL J. Cell Biol. 116:559-571(1992).
RL [2]
RN [2]
RP SEQUENCE FROM N.A.
RX TISSUE-Skin, and Colon;
RC MEDLINE-92235084; PubMed-1569102;
RA Murdoch A.D., Dodge G.R., Cohen I., Tuan R.S., Iozzo R.V.;
RT "Primary structure of the human heparan sulfate proteoglycan from
RT basement membrane (HSPG2/perlecan). A chimeric molecule with multiple
RT domains homologous to the low density lipoprotein receptor, laminin,
RT neural cell adhesion molecules, and epidermal growth factor."
RL J. Biol. Chem. 267:8544-8557(1992).
RL [3]
RN [3]
RP SEQUENCE OF 1018-1472 FROM N.A.
RX TISSUE-Colon;
RC MEDLINE-91365376; PubMed-1679749;
RA Dodge G.R., Kovalszky I., Chu M.L., Hassell J.R., McBride O.W.,
RA Yi H.F., Iozzo R.V.;
RT "Heparan sulfate proteoglycan of human colon: partial molecular
RT cloning, cellular expression, and mapping of the gene (HSPG2) to the
RT short arm of human chromosome 1."
RL Genomics 10:673-680(1991).
RL [4]
RN [4]
RP SEQUENCE OF 892-1398 FROM N.A.
RX TISSUE-Fibroblastoma;
RC MEDLINE-92120660; PubMed-1685141;
RA Kallunki P., Eddy R.L., Byers M.G., Kestila M., Shows T.B.,
RA Tryggvason K.;
RT "Cloning of human heparan sulfate proteoglycan core protein,
RT assignment of the gene (HSPG2) to lp36.1--p35 and identification of
RT a BamHI restriction fragment length polymorphism."
RL Genomics 11:389-396(1991).
RL [5]
RN [5]
RP SEQUENCE OF 1-21 FROM N.A.
RX MEDLINE-94052171; PubMed-8234307;
RA Cohen I.R., Graessel S., Murdoch A.D., Iozzo R.V.;

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RT "Structural characterization of the complete human perlecan gene and
RT its promoter."
RT Proc. Natl. Acad. Sci. U.S.A. 90:10404-10408(1993).
RL -1- FUNCTION: THIS PROTEIN IS AN INTEGRAL COMPONENT OF BASEMENT
CC MEMBRANES. IT IS RESPONSIBLE FOR THE FIXED NEGATIVE ELECTROSTATIC
CC CHARGE AND IS INVOLVED IN THE CHARGE-SELECTIVE ULTRAFILTRATION
CC PROPERTIES. IT INTERACTS WITH OTHER BASEMENT MEMBRANE COMPONENTS
CC SUCH AS LAMININ AND COLLAGEN TYPE IV AND SERVES AS AN ATTACHMENT
CC SUBSTRATE FOR CELLS.
CC -1- SUBUNIT: PURIFIED PERLECAN HAS A STRONG TENDENCY TO AGGREGATE IN
CC DIMERS OR STELLATE STRUCTURES.
CC -1- SUBCELLULAR LOCATION: EXTRACELLULAR.
CC -1- TISSUE SPECIFICITY: FOUND IN THE BASEMENT MEMBRANES.
CC -1- PTM: CONTAINS THREE HEPARAN SULFATE CHAINS AS WELL AS N-LINKED
CC AND O-LINKED OLIGOSACCHARIDES.
CC -1- SIMILARITY: CONTAINS 4 LDL-RECEPTOR CLASS A DOMAINS.
CC -1- SIMILARITY: CONTAINS 10.5 LAMININ EGF-LIKE DOMAINS.
CC -1- SIMILARITY: CONTAINS 3 LAMININ DOMAINS IV.
CC -1- SIMILARITY: CONTAINS 22 IMMUNOGLOBULIN-LIKE C2-TYPE DOMAINS.
CC -1- SIMILARITY: CONTAINS 3 LAMININ G-LIKE DOMAINS.
CC -1- SIMILARITY: CONTAINS 4 EGF-LIKE DOMAINS.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation-
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CC or send an email to license@isb-sib.ch)
CC -----
CC EMBL: X62515; CAA44373.1; -
CC EMBL: M85289; AAA52700.1; -
CC EMBL: M64283; AAA52699.1; -
CC EMBL: S76436; AAB21121.1; -
CC EMBL: L22078; -; NOT_ANNOTATED_CDS.
CC HSPG; P00740; IIXA.
CC MIM: 142461; -
CC InterPro: IPR000034; -
CC InterPro: IPR000082; -
CC InterPro: IPR000561; -
CC InterPro: IPR001438; -
CC InterPro: IPR001791; -
CC InterPro: IPR002049; -
CC InterPro: IPR02172; -
CC InterPro: IPR003006; -
CC Pfam: PF00008; EGF; 4.
CC Pfam: PF01390; SEA; 1.
CC Pfam: PF00047; Ig; 22.
CC Pfam: PF00052; laminin_B; 3.
CC Pfam: PF00053; laminin_EGF; 8.
CC Pfam: PF00054; laminin_G; 3.
CC Pfam: PF00057; IgL_recept_a; 4.
CC PRINTS: PR00010; EGFBL00D.
CC PROSITE: PS00022; EGF_1; 9.
CC PROSITE: PS01186; EGF_2; 5.
CC PROSITE: PS01209; LDLRA_1; 4.
CC PROSITE: PS01248; LAMININ_TYPE_EGF; 11.
CC PROSITE: PS50068; LDLRA_2; 4.
CC Signal: Basement membrane; Proteoglycan; Repeat; Glycoprotein;
CC Heparan sulfate; laminin EGF-like domain; Immunoglobulin domain;
CC Extracellular matrix; EGF-like domain.
CC SIGNAL
CC CHAIN
CC 1 21
CC 22 4393
CC 193
CC 194 404
CC 405 506
CC 507 1678
CC 1679 3688
CC 3689 4393
CC DOMAIN
CC DOMAIN II (4 LDLRA REPEATS).
CC DOMAIN III (1 IGG-REPEAT).
CC DOMAIN III (SIMILAR TO SHORT ARM OF
CC LAMININ A CHAIN).
CC DOMAIN IV (SIMILAR TO NEURAL CELL
CC ADHESION MOLECULE: 21 IGG REPEATS).
CC DOMAIN V (C-TERMINAL G-DOMAIN OF LAMININ

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FT	DOMAIN	197	236	ALPHA CHAINS AND EGF).
FT	DOMAIN	283	321	IDL-RECEPTOR CLASS A 1.
FT	DOMAIN	323	361	IDL-RECEPTOR CLASS A 2.
FT	DOMAIN	366	405	IDL-RECEPTOR CLASS A 3.
FT	DOMAIN	405	506	IDL-RECEPTOR CLASS A 4.
FT	DOMAIN	523	532	IG-LIKE C2-TYPE DOMAIN 1.
FT	DOMAIN	533	732	LAMININ EGF-LIKE 1 (N-TERMINAL).
FT	DOMAIN	733	755	LAMININ DOMAIN IV 1 (DOMAIN III A).
FT	DOMAIN	766	815	LAMININ EGF-LIKE 1 (C-TERMINAL).
FT	DOMAIN	816	873	LAMININ EGF-LIKE 2.
FT	DOMAIN	881	925	LAMININ EGF-LIKE 3.
FT	DOMAIN	926	935	LAMININ EGF-LIKE 4 (INCOMPLETE).
FT	DOMAIN	936	1137	LAMININ EGF-LIKE 5 (N-TERMINAL).
FT	DOMAIN	1128	1160	LAMININ DOMAIN IV 2 (DOMAIN III B).
FT	DOMAIN	1161	1210	LAMININ EGF-LIKE 5 (C-TERMINAL).
FT	DOMAIN	1211	1267	LAMININ EGF-LIKE 6.
FT	DOMAIN	1277	1336	LAMININ EGF-LIKE 7.
FT	DOMAIN	1327	1366	LAMININ EGF-LIKE 8.
FT	DOMAIN	1377	1531	LAMININ EGF-LIKE 9 (N-TERMINAL).
FT	DOMAIN	1532	1564	LAMININ EGF-LIKE 9 (C-TERMINAL).
FT	DOMAIN	1565	1614	LAMININ EGF-LIKE 10.
FT	DOMAIN	1615	1672	LAMININ EGF-LIKE 11.
FT	DOMAIN	1679	1773	IG-LIKE C2-TYPE DOMAIN 2.
FT	DOMAIN	1774	1867	IG-LIKE C2-TYPE DOMAIN 3.
FT	DOMAIN	1868	1957	IG-LIKE C2-TYPE DOMAIN 4.
FT	DOMAIN	1958	2053	IG-LIKE C2-TYPE DOMAIN 5.
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FT	DOMAIN	2154	2246	IG-LIKE C2-TYPE DOMAIN 7.
FT	DOMAIN	2247	2342	IG-LIKE C2-TYPE DOMAIN 8.
FT	DOMAIN	2343	2438	IG-LIKE C2-TYPE DOMAIN 9.
FT	DOMAIN	2439	2535	IG-LIKE C2-TYPE DOMAIN 10.
FT	DOMAIN	2536	2631	IG-LIKE C2-TYPE DOMAIN 11.
FT	DOMAIN	2632	2728	IG-LIKE C2-TYPE DOMAIN 12.
FT	DOMAIN	2729	2828	IG-LIKE C2-TYPE DOMAIN 13.
FT	DOMAIN	2829	2926	IG-LIKE C2-TYPE DOMAIN 14.
FT	DOMAIN	2927	3023	IG-LIKE C2-TYPE DOMAIN 15.
FT	DOMAIN	3024	3114	IG-LIKE C2-TYPE DOMAIN 16.
FT	DOMAIN	3115	3213	IG-LIKE C2-TYPE DOMAIN 17.
FT	DOMAIN	3214	3300	IG-LIKE C2-TYPE DOMAIN 18.
FT	DOMAIN	3301	3401	IG-LIKE C2-TYPE DOMAIN 19.
FT	DOMAIN	3402	3490	IG-LIKE C2-TYPE DOMAIN 20.
FT	DOMAIN	3491	3576	IG-LIKE C2-TYPE DOMAIN 21.
FT	DOMAIN	3577	3671	IG-LIKE C2-TYPE DOMAIN 22.
FT	DOMAIN	3701	3847	LAMININ G-LIKE 1 (GLOBULAR DOMAIN V A).
FT	DOMAIN	3846	3883	EGF-LIKE 1.
FT	DOMAIN	3886	3924	EGF-LIKE 2.
FT	DOMAIN	3966	4104	LAMININ G-LIKE 2 (GLOBULAR DOMAIN V B).
FT	DOMAIN	4106	4143	EGF-LIKE 3.
FT	DOMAIN	4145	4178	EGF-LIKE 4.
FT	DOMAIN	4243	4331	LAMININ G-LIKE 3 (GLOBULAR DOMAIN V C).
FT	DOMAIN	65	67	HEPARAN SULFATE (POTENTIAL).
FT	SITE	71	73	HEPARAN SULFATE (POTENTIAL).
FT	SITE	76	78	HEPARAN SULFATE (POTENTIAL).
FT	SITE	4151	4153	MEDIANE MOTOR NEURON ATTACHMENT (POTENTIAL).
FT	SITE	4301	4303	MEDIANE MOTOR NEURON ATTACHMENT (POTENTIAL).
FT	DISULFID	199	212	BY SIMILARITY.
FT	DISULFID	206	225	BY SIMILARITY.
FT	DISULFID	219	234	BY SIMILARITY.
FT	DISULFID	285	297	BY SIMILARITY.
FT	DISULFID	292	310	BY SIMILARITY.
FT	DISULFID	304	319	BY SIMILARITY.
FT	DISULFID	325	337	BY SIMILARITY.
FT	DISULFID	332	350	BY SIMILARITY.
FT	DISULFID	344	359	BY SIMILARITY.
FT	DISULFID	368	381	BY SIMILARITY.
FT	DISULFID	375	394	BY SIMILARITY.
FT	DISULFID	388	403	BY SIMILARITY.
FT	DISULFID	766	775	BY SIMILARITY.
FT	DISULFID	768	782	BY SIMILARITY.

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QY      2  CGPCSERRKRLHFVDDPQTC-KSCSKNTDPSRC 31
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RESULT  15
ID      ANTA_HYDMA      STANDARD:      PRT:      220 AA.
AC      P38977;
DT      01-FEB-1995 (Rel. 31, Created)
DT      01-FEB-1995 (Rel. 31, Last sequence update)
DT      01-FEB-1995 (Rel. 31, Last annotation update)
DE      ANTISTASIN PRECURSOR (A1TS) (X4/PROCLTOTING ENZYME INHIBITOR).
OS      Hydra-magnipapillata (Hydra).
OC      Eukaryota; Metazoa; Cnidaria; Hydrozoa; Hydroida; Anthomedusae;
OC      Hydroidae; Hydra.
OX      NCBI_TaxID=6085;
RN      [1]
RP      SEQUENCE FROM N.A.
RC      STRAIN=SE1;
RX      MEDLINE=92387373; PubMed=15166699;
RA      Holstein T.W., Mala C., Kurtz E., Bauer K., Greber M., David C.N.;
RT      "The primitive metazoan Hydra expresses antistasin, a serine protease
RT      inhibitor of vertebrate blood coagulation: cDNA cloning, cellular
RT      localisation and developmental regulation."
RL      FEBS Lett. 309:288-292(1992).
CC      -1- FUNCTION: THIS HIGHLY DISULFIDE-BONDED PROTEIN IS A POTENT
CC      INHIBITOR OF FACTOR XA. FACILITATES DIGESTION OF TISSUES
CC      AND MAY ALSO PROTECT THE GASTRIC TISSUES FROM ITS OWN DIGESTIVE
CC      ENZYMES. MAY HAVE THERAPEUTIC UTILITY AS AN ANTICOAGULANT. ALSO
CC      EXHIBITS A STRONG METASTATIC ACTIVITY.
CC      -1- SUBCELLULAR LOCATION: ENDOPASMIC RETICULUM.
CC      -1- TISSUE SPECIFICITY: GLAND CELLS. IT IS MORE STRONGLY EXPRESSED
CC      IN THE HEAD THAN IN THE GASTRIC TISSUE.
CC      -1- SIMILARITY: BELONGS TO THE ANTISTASIN FAMILY.
CC      -----
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CC      between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC      or send an email to license@isb.slb.ch).
CC      -----
DR      EMBL; X67590; CAA47864.1; -.
DR      PIR; S29195; S29195.
DR      HSSP; P15358; 1SKZ.
KW      Serine protease inhibitor; Repeat; Heparin-binding;
KW      Blood coagulation; Signal.
FT      SIGNAL 1
FT      CHAIN 20 220
FT      DOMAIN 21 220
FT      REPEAT 21 53
FT      REPEAT 54 90
FT      REPEAT 91 119
FT      REPEAT 120 153
FT      REPEAT 154 182
FT      REPEAT 183 220
FT      ACT_SITE 27 28
FT      ACT_SITE 60 61
FT      ACT_SITE 98 99
FT      ACT_SITE 161 162
SQ      SEQUENCE 220 AA; 25016 MM;

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QY 5 CSEBKKHLYQDPQTC-KCSCANTDSRCKAROL-----ELNE---RTCRC 45
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Search completed: September 24, 2001, 16:16:17
Job time: 193 sec

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